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**THE COMORBIDITY OF BULIMIA NERVOSA, SUBSTANCE ABUSE
AND DEPRESSION**

by

KIM SCHNARE-HAYES, B.A. (Hon.)

A thesis submitted to
the Faculty of Graduate Studies and Research
in partial fulfilment of
the requirements for the degree of

Master of Arts

Department of Psychology

Carleton University

Ottawa, Ontario

April 26, 1995

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Abstract

The purpose of this study was to investigate whether bulimia nervosa (BN) is best conceptualized as a distinct disorder or a variant of an affective, addictive or impulsivity disorder. To examine this issue the thesis addressed the question of whether the comorbidity of psychiatric disorders in subjects with BN is best explained by subtype differences or by a model based on severity of psychopathology. The investigation also explored the incidence of impulsivity among the subgroups of BN subjects. Information on demographic factors, eating disordered and weight history variables, the Beck Depression Inventory (BDI), the Bulimic Symptom Checklist (BSC), the Eating Disorder Inventory (EDI), the Hopkins Symptom Checklist (SCL-90-R) and impulsivity items was compared by subgroup. Subjects were divided into groups based on meeting criteria for depressive and/or substance abuse disorders. According to the results, BN patients with depressive disorders were characterized by the most extreme depression symptoms and eating disorder cognitions and behaviours. Whereas, those with substance abuse disorders were older, had longer histories of bingeing and purging, suffered from high rates of general psychopathology and tended to be impulsive. The results are discussed in terms of current models of comorbidity of psychiatric disorders.

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Chapter 1: Introduction

Bulimia nervosa (BN) is a severe eating disorder primarily affecting women (Garner & Garfinkel, 1985). It is a psychiatric disorder which is characterized by three core features (American Psychiatric Association, APA, 1987). First, there are recurrent episodes of binge eating, which consist of the rapid consumption of large amounts of food within a short time span. This behaviour must occur at least 2 times a week for a minimum of three months to meet the criteria for diagnosis of BN. During binges, there is an associated feeling of loss of control over one's eating behaviour. Second, the weight gain resulting from overeating is minimized by one or all of the following purgative behaviours: self-induced vomiting, use of laxatives or diuretics, strict dieting or fasting or vigorous exercise. Third, BN is characterized by disturbed attitudes toward body weight and shape (Garner & Garfinkel, 1985).

These features have been considered by some to be the primary characteristics of BN (Fairburn & Garner, 1986). Other symptoms associated with the disorder appear to vary in type as well as severity. Some BN patients demonstrate other psychiatric disorders. Substance abuse disorder and depression are the most frequently reported comorbid disorders in this patient population (Casper, Eckert, Halmi, Goldberg & Davis, 1980; Garfinkel, Moldofsky & Garner, 1980; Walsh, Roose,

Glassman, Gladis & Sadik, 1985). However, studies examining the incidence and manner that these disorders and BN are related have been few (Hatsukami, Eckert, Mitchell & Pyle, 1984; Bulik, 1987).

Even though BN is defined in the DSM-III-R as a psychiatric disorder, several theories have been developed suggesting that BN is a substrate of other psychiatric conditions. These theories have been put forth to explain the etiology of BN and the commonalities between BN and other psychiatric disorders. Evidence to support these hypotheses has been derived from studies reporting high rates of these disorders in BN samples. In contrast, BN has also been defined as a unique disorder which often presents with specific comorbid psychiatric conditions.

Research, studying comorbidity in BN patients, has been undertaken predominantly in the areas of depression and other affective disorders. Bulimia nervosa and depression studies reveal that a significant relationship between these disorders exists. Investigations reporting clinical similarities between patients with major depression and BN have contributed to the development of the theory that BN is a substrate of depression (Cantwell, Sturzenber, Burroughs & Green, 1977; Winokur, March & Mendels, 1980; Hudson, Lafter & Pope, 1982). Similarities found included depressive symptoms (Blouin, Zuro & Blouin, 1990; Fairburn & Cooper, 1982; Johnson & Berndt, 1983; Norman & Herzog 1983; Schmidt & Telch, 1990), high rates of familial

affective disorder (Lee, Rush & Mitchell, 1985), successful treatment with anti-depressant drugs (Viesselman & Roig, 1985; Lee, et al., 1985) and similar neurobiological abnormalities between patients with major depression and BN (Levy, Dixon & Stern, 1989).

In contrast, others have interpreted these similarities as follows: the symptoms of depression in BN may be the result of malnutrition rather than primary depression (Keys et al., 1950; Levy et al., 1989), eating disorders are unique disorders not variants of affective disorder, or alcoholism, and positive response to an antidepressant does not necessarily mean that the disorder being treated is depression (Viesselman & Roig, 1985).

Fewer studies have examined the comorbidity of BN and substance abuse. Some have conceptualized BN as an addictive disorder (Brisman & Siegel, 1984; Scott, 1983; Sinnett, Judd & Olson, 1983; Casper et al., 1980; Brisman and Siegel, 1984). This theory is based on the presupposition that BN patients demonstrate symptoms which are commonly observed in substance abusing patients (Scott, 1983; Sinnett et al., 1983). Specifically, both patient groups have been described as demonstrating the following: a perceived loss of control, excessive preoccupation with a substance, the tendency to hide, gorge on and steal to obtain the substance, and continued problematic behaviour despite negative consequences. It has been suggested that both disorders can be understood

from an addictions perspective which focuses on the function the substance abuse serves, rather than the specifics of the type of substance abused (Brisman and Siegel, 1984). Additional support for this hypothesis has been derived from reports that many BN patients have histories of substance abuse and that eating disorders have frequently been observed in individuals who have substance abuse problems.

In contrast, others have suggested that there may not be a specific association between eating disorders and substance abuse disorders. Some studies indicate that the prevalence of eating disorders may also be raised in psychiatric patients in general (Peveler and Fairburn, 1990).

The comorbidity of impulsive behaviours and BN is a recent area of investigation. Some theorists have classified BN as an impulsive behaviour disorder. A propensity toward impulsivity, either in relation to food, psychoactive substances or emotions may be the link among these disorders.

Bulimia nervosa, substance abuse, depression and impulsive behaviours may have similar genetic, physiological, and/or cognitive predisposing factors. It is unlikely that the disorders themselves can be best conceptualized as variants of one another. Common predisposing factors, however, could explain why these disorders tend to co-occur in BN populations.

The co-occurrence of psychiatric conditions, in general, has been suggested to result from an increased vulnerability

which develops in individuals who already have a psychiatric disorder (Boyd, Burke, Guenberg, Holzer, Rae, George, Karno, Stolzman, McEvoy & Nestadt, 1984). This factor may contribute to the incidence of comorbidity. However, it would fail to explain how different disorders are related. An adequate explanation of the comorbidity of psychiatric disorders does not exist. The nature of the relationship is a complex one and investigations in this area of research are preliminary.

The primary purpose of this study is to investigate whether the evidence supports the conceptualization of BN as a distinct disorder characterized by specific subtypes, or as a variant of one of three potential other psychiatric disorders (affective disorder, addictive disorder or impulsive behaviour disorder). This will be accomplished by comparing BN subjects who have comorbid psychiatric conditions of depression and/or substance abuse with BN subjects who do not exhibit these comorbid disorders. Further, this question will be addressed by examining whether the comorbidity of psychiatric disorders is best explained by subgroup differences or by a model based on severity of psychopathology.

Demographic backgrounds, weight histories and clinical symptoms will be compared for four groups of subjects: 1) BN subjects; 2) BN subjects with depressive disorder; 3) BN subjects with substance abuse disorder; 4) BN subjects with depressive and substance abuse disorder. The factors to be

investigated include: the severity of bulimic cognitions and the frequency of bulimic behaviours, the severity of depression and the incidence of other psychiatric symptoms. The comorbidity of psychiatric disorders will be examined based on the following models:

- 1) Sickness Model: Subjects exhibiting more frequent and severe eating disorder and psychiatric symptoms or an increased number of psychiatric disorders will be at a greater risk of developing subsequent psychiatric diagnoses;
- 2) Subgroup Model: Subjects in specific subgroups will demonstrate unique characterological profiles. These trait differences may predict the development of additional, specific psychiatric disorders.

The second purpose is to investigate the rates and types of impulsive behaviours exhibited by these groups. This will be undertaken to determine whether impulsive tendencies characterize BN subjects, with substance abuse disorders more than those without these diagnoses. This may be indicative of personality pathology.

It is expected that this investigation will demonstrate that BN is best conceptualized as a distinct psychiatric condition, often characterized by specific subgroups. This will be accomplished by identifying factors which are common to all subjects with BN and those that are specific to the co-occurrence of depression, substance abuse or impulsivity

disorders. Further, it is intended to contribute to knowledge of the comorbidity of psychiatric disorders, in general.

Chapter 2: Background

Studies on BN and Affective Disorders

Clinical and research reports have noted the co-occurrence of depressive symptoms and bulimia. Patients with BN have been described, in several research studies, as suffering from moderate to severe states of depression. Rates of depression have been reported to vary from between 23% to 87% (Russell, 1979; Johnson, Stuckey, Lewis & Schwartz, 1982; Herzog, 1984; Lee et al., 1985; Viesselman & Roig, 1985) and up to 90% of bulimics have been reported to have a major affective disorder (Hudson, Pope, Jonas, Yurgelun-Todd, 1983; Walsh et al., 1985; Swift, Andrews & Barklage, 1986; Blouin et al., 1990). Prevalence rates for depression have been noted to be higher in this population than in epidemiological surveys of the general population (Levy et al., 1989) and family studies have contributed to the hypothesis that a connection between depression and BN may exist.

Many investigations have reported a high incidence of affective disorder and alcoholism in first and second degree relatives of bulimics (Herzog, 1984; Lee et al., 1985). In general, studies have found that approximately 60% of bulimics have a positive family history of depression in at least one first degree relative (Hudson, Laffer & Pope, 1982; Hudson et al., 1983; Herzog, 1984; Lee et al., 1985; Viesselman & Roig, 1985).

Many BN patients have been diagnosed as having a major depressive or dysthymic disorder. For instance, Hatsukami, Eckert, Mitchell & Pyle, (1984) analyzed the results of several studies investigating the prevalence of affective disorder in bulimics, according to DSM-III criteria, and found that 42% were diagnosed with major depressive disorder, 48% with dysthymic disorder, 9% with cyclothymic disorder, 1% with atypical depressive disorder. In another investigation (Walsh et al., 1985), it was reported that 74% of patients had their first episode of major depression simultaneously with, or following the onset of an eating disorder compared to 26% of the sample which reported experiencing an episode of major depression prior to the eating disorder.

Studies examining the severity of depressive symptomatology have reported that BN patients score between the mild and severe ranges on testing instruments such as the Beck Depression Inventory or the Hamilton Rating Scale (Sabine, Yonace & Farrington, 1983; Hudson et al., 1983; Walsh et al., 1985). No investigations have compared BN only subjects to those with a depressive disorder to determine where the differences in depressive symptoms are apparent. As a result, it is difficult to predict, based on the studies undertaken thus far, in what way the BN only group and the BN and depressive disorder group will differ in the present investigation.

Varying rates of depression and affective disorder have been reported in this patient population. These discrepancies are likely best explained by methodological inconsistencies. For instance, issues such as using various diagnostic criteria for bulimia, depression and affective disorder, and measurement instruments as well as infrequent use of a control group or comparison group and a lack of differentiation in many of the studies, between depression symptoms and a depressive disorder. Despite the discrepancies in rates and the type of depression under investigation, BN patients tend to present with some type of depression problem, although the type and degree may vary by subtype. The present research will attempt to address this gap in understanding.

Studies on BN and Substance Abuse

It has frequently been documented that high rates of substance abuse problems exist amongst BN patients. One of the first researchers to describe substance abuse patients with eating disorders was Crisp (1968), who observed its occurrence in anorexia nervosa (AN) and bulimia (BN) patients. Subsequently, in 1979, Russell began specifically comparing individuals with BN and substance abuse disorders. Since, research in this area has become more common and many reports highlighting the prevalence of substance abuse in bulimia patients have been undertaken.

Investigations using DSM-III criteria for bulimia have recorded rates of substance abuse disorder in this population

of between 10% and 36% (Mitchell, Hatsukami, Eckert & Pyle, 1985; Butterfield & LeClair, 1988; Hatsukami, Owen, Pyle & Mitchell, 1982; Hatsukami et al., 1984; Johnson et al., 1982). In a study reporting on the incidence of bulimia in substance abusing patients, which used DSM-III criteria, 40% of 27 female, alcoholic patients (Lacey and Moureli, 1986) reported present or past histories of bulimia (7 were actively binge eating and 4 had histories of binge eating). The range in rates of bulimia and substance abuse in either population are likely attributable in part to the use of different diagnostic criteria.

Studies which employed either DSM-III-R criteria or Russell's criteria also reported mixed rates in the prevalence of substance abuse disorder in BN patients and in BN substance abuse patients. One such study which employed Russell's criteria for BN (Beary, Lacey & Merry, 1986) reported alcohol problems in 50% of a sample of 20 bulimia patients. Whereas, in studies using alcoholic female samples rates of bulimia have been recorded at between 8% and 56% (Peveler & Fairburn, 1990; Corrigan, Johnson, Alford, Gergeron & Lemmon, 1990; Wilson, 1992; Suzuki, Higuchi, Yamanda, Mizutami & Kono, 1993).

The evidence suggests that the rate of eating disorders and substance abuse in patients with BN or alcohol or drug abuse problems is elevated. Discrepancies in the prevalence of these disorders in the two populations may be attributed to

several methodological issues. One, the use of Russell's criteria for BN (which is more similar to DSM-III-R criteria for the disorder than DSM-III criteria) may account for the higher rates of alcohol problems reported in studies of BN subjects, as compared to others, since many subjects were excluded who would have been included if DSM-III criteria were used. Also, study design may account for inconsistencies in rates. For instance, in the Johnson and colleagues study, a survey research method was used which involved mailing the information to all respondents who indicated a problem with binge eating. No professional contact was made with any of the participants which could have biased results in that participants may have misreported rates of alcohol and drug use. Finally, the different rates of BN in the substance abuse samples could reflect a tendency for higher rates of eating disorders to occur in this population, than for substance abuse disorder to occur in BN subjects.

Many of the studies which followed investigations into the prevalence of substance abuse disorders in this population focused on whether a relation between bulimia nervosa and substance abuse exists. Some have examined the personality features of bulimia nervosa patients (DeSilva & Eysenck, 1987; Feldman & Eysenck, 1986; Gossop and Eysenck, 1980), and others have compared the clinical profiles of BN and substance abusing patients (Yates, Bowers, Carney & Fulton, 1990; Hatsukami et al., 1982; Derksen, 1990). Of these, a few

studies have reported on the incidence and nature of Axis I disorders, while others have focused on clinical family histories.

Personality factors were investigated in a study undertaken by DeSilva and Eysenck (1987) which compared anorexia nervosa patients (N=59) with bulimia nervosa patients (N=122) on the Eysenck Personality Questionnaire (EPQ) and on an addiction score derived from the EPQ. Bulimics scored significantly higher than anorexics on psychoticism, neuroticism and addiction, tending to exhibit a personality profile which resembled drug addicts'. Similarly, Feldman and Eysenck (1986), who studied 45 bulimia patients attending treatment for bulimia nervosa, found that according to the EPQ, bulimic patients scored almost as high as drug addicts on the addiction scale. The overall personality profile of the bulimics was similar to those of drug addicts: low extroversion, high neuroticism and high psychoticism (Gossop and Eysenck, 1980, Feldman and Eysenck, 1986). Overall, the findings of these two studies suggest that BN patients personality traits are similar to those of drug addicts, which suggests that the two groups share a personality profile which could contribute to the development and/or maintenance of either or both of these disorders.

One study comparing the clinical profile of BN and substance abuse patients conducted by Hatsukami and colleagues (1982) examined the MMPI scores of outpatient females with

bulimia (N=50) (DSM-III) to inpatient females with alcohol and drug abuse problems (N=120). The two groups shared common features including depression, impulsivity, anger, rebelliousness, anxiety, rumination, social withdrawal, and idiosyncratic thinking. However, the MMPI codetypes, which are said to be comparable to a personality type, differed between the two groups. Bulimic women were characterized as overanxious, ruminative, indecisive, withdrawn and inhibited. Whereas, women with alcohol or drug abuse problems were characterized as unpredictable, impulsive, unstable and prone to acting-out. In contrast, Butterfield and Leclair (1988), in a study which compared similarities and differences in the cognitive characteristics of bulimics (N=38) and drug-abusing women (N=42), found BN were more prone to depression than sedative/depressant drug-abusers. A third investigation compared alcohol use among disordered eaters in terms of eating disordered behaviours and cognitions, using the Eating Disorders Inventory (EDI) (Lundholm, 1989). Females with high alcohol use scores received significantly higher scores on the EDI scales of interoceptive awareness, ineffectiveness, maturity fears, interpersonal distrust and bulimia.

Similarly, an investigation comparing alcoholic patients with and without histories of bulimia reported that those with bulimia had higher scores on the Eating Attitudes Test (EAT), were younger, reported the onset of their problem drinking at an earlier age, and were heavier (Lacey & Moureli, 1986). In

contrast, Suzuki et al., (1993) found female alcoholics with an eating disorder to have lower body weights, but like Lacey and Moureli, this group reported an earlier onset of problem drinking compared to the alcoholic subjects without an eating disorder. Furthermore, the alcoholic women with an eating disorder reported higher rates of depression and were less likely to be married than the ones without this secondary diagnosis.

A few studies have compared the incidence of Axis II phenomenon in BN patients and alcohol and drug addicted patients. Yates et al., (1990) reported that women with bulimia nervosa (DSM-III-R) (outpatients) were as likely to display traits of histrionic personality disorder as women with alcohol abuse problems (inpatients), but they were less likely to have antisocial or borderline traits (PDQ). In another study (Derksen, 1990), the incidence of borderline personality disorder in women with eating disorders and in women with psychoactive substance dependence was examined. The results indicated that borderline personality disorder was more frequent in the substance abuse group (5 of 25 patients) than in the eating disorder group (1 of 20 patients). Similarly, Suzuki et al., (1993) reported that female alcoholics with eating disorders (93% met criteria for BN) met criteria for borderline personality disorder more frequently than female alcoholics without eating disorders. Recently, Sansone, Fine and Nunn (1994, in press) compared female eating

disordered patients (AN and BN, N=50), substance abuse patients (N=22), comorbid eating disorder and substance abuse disorder patients (N=17) and college students on measures of borderline personality symptomatology and self-harm behaviours. This group reported that the eating disorder/substance abuse group were significantly more likely to be classified as having BPD and at a greater risk of engaging in self-destructive behaviours. Based on the findings of Axis II studies undertaken to date it appears that BPD is more prevalent in substance abuse patients, in general, and in eating disorder patients who have a comorbid substance abuse problem compared to those without this disorder.

Family histories of BN patients have also been investigated to determine whether eating disorders and substance abuse are related. One investigator (Bulik, 1987) examined affective and addictive components of bulimia nervosa and individual tendencies toward alcohol abuse and depression, as well as, family histories of alcoholism and affective disorder, in 12 women who met criteria for bulimia (DSM-III) and 12 matched controls. The results revealed no significant differences in global alcoholism scores. However, a subgroup of bulimics emerged for whom bulimia was one of "multiple and debilitating" addictions. In a controlled study, the patterns of drug and alcohol abuse in 35 bulimic women (DSM-III) and 35 normal controls and their first and second degree relatives were compared (Bulik, 1987). Bulimic women and their families

demonstrated higher rates of substance abuse compared to controls. Furthermore, the most common concomitant diagnoses for the bulimic subjects were major depression and alcohol abuse. Alcohol dependence, drug abuse and dependence and suicide attempts were also significantly more frequent in the bulimic subjects.

In a study undertaken by Mitchell, Hatsukami, Pyle & Eckert, (1988) patients who met criteria for bulimia (DSM-III) were classified according to whether or not a first degree relative had a history of drug abuse. Patients with a positive family history of drug abuse did not differ from patients without this history on the variables of age at evaluation and age of onset of the eating disorder, or in terms of the pattern or severity of bulimic behaviours. However, patients with a family history of drug abuse were more likely to have been treated for chemical dependency themselves and to have been treated for chemical dependency prior to being evaluated for their eating disorder.

Overall, controlled and uncontrolled family history studies on BN reveal a tendency for BN women and their families to demonstrate higher rates of substance abuse than controls. This pattern suggests that an association between the two disorders does exist and that further studies investigating the co-occurrence within families is warranted.

Studies Examining the Prevalence of Substance Abuse and Affective Disorders in BN Subjects

Two investigations have been undertaken to examine the incidence of affective disorders and substance abuse within the BN population. The first investigation, conducted by Hatsukami et al., (1984), evaluated 108 bulimic women for affective disorder and alcohol abuse. The results indicated that 43.5% had a history of affective disorder and 18.5% had a history of alcohol or drug abuse. Similarly, Bulik (1987) investigated the individual tendencies of 12 bulimia patients toward alcohol abuse and depression compared to 12 age-matched controls. She reported that depression scores were significantly higher among bulimic patients, and that there were no differences in global alcoholism scores, although a subgroup of bulimics emerged for whom bulimia was one of several impulsive disorders.

Limitations of these studies include the use of unstandardized testing instruments, small samples and few dependent measures. In addition, the use of DSM-III criteria for bulimia limits the generalizability of the findings, as the DSM-III-R criteria is defined in such a way that it excludes subjects who report bingeing only, but do not engage in purgative behaviour.

As a result of some of the methodological weaknesses of previous studies, conclusions based on the results reviewed are somewhat limited. Some findings suggest that women with BN

may not be distinguishable regardless of whether a concomitant psychiatric problem is present, while others suggest otherwise. It appears that the co-occurrence of these disorders is common, as a result, the need for study to elucidate the nature of the relation among them is important.

Personality Disorders and Bulimia Nervosa Studies

It has been suggested that individuals diagnosed with BN are also at risk of developing personality disorders (Yates, Sieleni & Bowers, 1989; Rather & Williamson, 1988; Weisberg, Norman & Herzog, 1987). Rates of personality disorders in the BN population have been reported in the range of 31% to 93%. Variability in the types of character disorders prevalent in this patient population have also been observed, although experimental design limitations may to some extent explain these discrepancies.

Uncontrolled studies examining BN and personality disorders have been conducted using both DSM-III and DSM-III-R diagnostic criteria, as well as, various other testing instruments. Studies using DSM-III criteria have reported rates of personality disorders of up to 63% (Levin & Hyler, 1986; Piran, Lerner, Garfinkel, Kennedy & Braillette, 1988). The most frequent diagnoses fall into the dramatic-erratic cluster for character disorders. Similarly, studies employing the use of DSM-III-R criteria for BN have reported rates of personality disorders between 31% and 93%, in bulimia nervosa subjects (Powers, Coover, Brightwell & Stevens, 1988;

Wonderlich, Swift, Slotnick & Goodman, 1990; Schmidt & Telch, 1990; Gartner, Marcus, Halmi & Loring, 1989; Zanarini, Frankenburg, Pope, Hudson, Yurgelun-Todd & Cicchetti, 1990; Kennedy, McVey & Katz, 1990; McClelland, Mynors-Wallis, Fahy & Treasure, 1991; Yates, Sieleni, Reich & Brass, 1989). These studies also consistently reported that the majority of subjects suffered from comorbid personality disorders of the dramatic-erratic type. The most common diagnosis in the studies using either DSM-III or DSM-III-R criteria were borderline personality disorder, followed by histrionic personality disorder. Finally, it is important to note that according to one researcher, personality disordered bulimics were significantly more likely to have a history of major depression and suicide attempts, higher lifetime maximum and minimum BMI's and higher overall EDI scores (Yates et al., 1989).

Several controlled studies have been undertaken to examine Axis II diagnoses, according to DSM-III-R criteria in BN. Rates of personality disorders have been reported as occurring in approximately 50% of samples (Tisdale & Pendleton, 1990; Pendleton, Tisdale, Moll & Marler, 1991; Yates et al., 1989). Specifically, a study conducted by Pope and colleagues (1987) found that only 1.9% of 52 bulimia nervosa patients were diagnosed as meeting the Diagnostic Interview for Borderlines (DIB) criteria (DSM-III), no other personality disorders were reported in this study. In

contrast, rates of borderline personality disorder of between 19% and 40% have been reported in uncontrolled research studies (Levin & Hyler, 1986; Piran et al., 1988; Wonderlich et al, 1989).

In sum, uncontrolled and controlled studies investigating personality disorders in BN patients have reported similar prevalence rates of between 31% and 93%. In general, BN subjects tend to exhibit Axis II disorders belonging to the cluster B (dramatic-erratic) and C categories (anxious-fearful) of psychiatric disorders. Specifically, the rates of borderline personality disorder reported are mixed. In well-controlled studies rates for this disorder were quite low; whereas, uncontrolled studies tended to report high rates of BPD in BN patients. These discrepancies are likely a result of several methodological factors including controlled versus non-controlled studies, differing testing instruments, pre-treatment versus post-treatment testing, DSM-III versus DSM-III R diagnostic criteria, small versus large samples and subject characteristics (e.g. inpatients versus outpatients or types of bulimia patients).

Personality Disorders and Substance Abuse Studies

Within the substance abuse population the comorbidity of other psychiatric disorders including personality disorder is very common. Studies investigating the types of personality disorders substance abusers demonstrate are many. Personality disorders in alcoholic patients have been associated with

early onset of alcoholism, especially in patients with antisocial personality disorder (ASP) or borderline personality disorder (BPD) (Nace, 1989). In addition, other studies have found that alcoholics with Axis II disorders are more likely to have symptoms of anxiety, depression, schizophrenia, mania or show features of somatization disorder and chronic depression (Nace, 1989; Cadoret, Troughton & Widmer, 1984) than those without a co-occurring personality disorder.

In general, research has associated high rates of depression and ASP with alcoholic patients. Hesselbrock et al. (1985) used DSM-III criteria to assess the prevalence of lifetime psychopathology among hospitalized alcoholics. Major depression (52%) and phobia (44%) were the most common psychopathologies reported among female alcoholics (N=90). Twenty percent (20%) of females in this sample also met criteria for antisocial personality disorder (ASP). Similarly, Hasin and colleagues (1988) found high lifetime prevalence of major depressive disorder and high rates of antisocial symptoms, in 123 alcohol rehabilitation patients. The association between alcoholism and major depression was not as strong as, in a study undertaken by Helzer and Pryzbeck (1987); however, these researchers re-affirmed a strong association between alcoholism and ASP. The discrepancy in findings that depression was not as prevalent in this sample compared to Helzer and Pryzbeck's results, may be a result of

the proportion of male and female subjects, only 31% were females whereas 83% were males. Research studies have, on average, reported higher rates of depression in females with alcohol abuse disorder than in males with the same disorder (Hesselbrock et al., 1985; Beckman, 1975). High rates of ASP in Hasin and Grant's study (1987) may also be biased by the disproportionate number of females and males in the sample, as men with alcohol abuse problems have been found to display sociopathic tendencies significantly more frequently than females (Hesselbrock et al., 1985; Beckman, 1975).

A study of 2,462 psychiatric patients (Koenigsberg, Kaplan, Gilmore & Cooper, 1985) also provides support for an association between ASP and borderline personality disorder (BPD) and substance abuse. In this study, 61% of subjects were female and 39% were male; no sex differences were reported. Among the patients with substance use disorder, the most frequent personality disorders were borderline (43%) and antisocial (21%). Overall, patients with substance use disorder were most likely to have associated Axis II diagnoses than any other patient group.

Studies focusing on specific personality disorders and their defining features have included an investigation which compared borderline and nonborderline alcoholic patients (Nace, Saxon & Shore, 1983). Borderline personality disorder diagnoses were made for 13% of this inpatient sample (N=94). No sex differences were noted. Vaglum and Vaglum (1989)

compared alcoholic women with borderline personality disorder (BPD) (N=26) to those with mixed personality disorder (MPD) (N=16) on sociodemographic, family and life history, social functioning and somatic and mental health. The MBD women were reported to have a higher frequency of an Axis I disorder (primarily depressive and anxiety) and a greater frequency of paranoid personality disorder. Stravynski, Lamontagne & Lavalee, (1986), in a study of 173 alcoholics screened for phobias and avoidant personality disorder reported that 8.5% met criteria for agoraphobia, 7.8% for social phobia and 35.1% for avoidant personality disorder.

In sum, Axis II disorders in patients with alcohol abuse disorder have been associated with early onset of alcoholism in both borderline and antisocial personality disorder patients. Subjects with alcohol problems who are female are more frequently characterized by BPD than are males, who are more frequently diagnosed with ASP. In addition, substance abusers report higher rates of Axis I symptomatology. Specifically, high rates of depression are often reported in this patient group, most notably among females.

Personality Disorders and Depression Studies

Character pathology has often been recognized as a correlate of depressive disorder. The prevalence rates of personality disorders in major depression have been reported to range between 9.3% and 100% (Zimmerman et al., 1991). Three types of studies have been undertaken to explore the

relationship between depression and personality disorders: 1) those based on samples of depressives; 2) those based on samples of persons with a specific personality disorder; 3) those which have included persons with both depression and personality disorders. One study (Charney, Nelson & Quinlan, 1981), which employed a chart review, found variable rates of personality disorders according to depressive subtypes. Higher rates of personality disorder in the unipolar nonmelancholic depressed patient group (61%) compared to both the bipolar (23%) and the unipolar groups (14%). An inpatient sample studied by Friedman, Aronoff, Clarkin, Corn and Hurt (1983) reported that 81% of 53 consecutive admissions had either major depressive, dysthymic, or atypical depressive disorder and a concurrent personality disorder.

Other studies have examined the rates and presentation of specific personality disorders observed in depressed samples and have found variability among inpatient and outpatient samples. In inpatient samples the most frequently occurring personality disorders reported are borderline and histrionic (Pfohl, Stangl & Zimmerman, 1984; Friedman, Aronoff & Clarkin, 1983). Outpatient depressive samples who have personality disorders tend to exhibit those from the anxious-fearful cluster (Tyrer, Casey & Gall, 1983; Shea, Glass, Pilkonis, Watkins & Doherty, 1987; Sanderson, Wetzler, Beck & Betz, 1991). Rates of personality disorder in these studies have been recorded at up to 50% in these samples. In one study

(Sanderson et al., 1991) patients with a personality disorder also had higher scores on the Beck Depression Inventory, had a worse prognosis, and required additional treatment.

Patterns of depressive symptomatology may reveal similarities and differences among depressives with characterological problems and those without. Pfohl et al., (1984) found that depressives with a personality disorder experienced more severe episodes of depression as assessed by the Beck Depression Inventory and the Hamilton Rating Scale for Depression. In contrast, Charney et al., (1981) observed that melancholic depressed inpatients without a personality disorder demonstrated more ruminative thinking. Suicide ideation (Charney et al., 1981), and serious (Friedman et al., 1983) and nonserious suicide attempts (Pfohl et al., 1984) have been found to be associated with depressives with personality disorders.

Research to date suggests that there may be differences between the types of personality disorders associated with distinct forms of depression and that depressives with comorbid personality disorders may require treatment specifically designed to address their unique presentation of symptoms. Studies have indicated that depressives with a personality disorder generally respond less favourably to treatments for depression than do other depressives (Charney et al., 1981; Tyrer et al., 1983; Frank, Kupfer, Jacob & Jarrett, 1987; Pilkonis & Frank, 1988). In contrast, some

studies have reported null or mixed findings related to treatment response in depressives with or without concurrent personality pathology (Pfohl et al., 1987; VanValkenburg, Akiskal & Puzantian, 1983).

This variability can be attributed to methodological limitations including self-report versus clinical interview, comparing the findings of inpatient samples with outpatient samples; as well as the use of inadequate sample sizes, the lack of a control group and the use of different diagnostic criteria. The empirical literature examining the association between depression and personality disorders is based primarily on self-report, pencil and paper questionnaires. This method of data collection has been considered by some to be limited by the biasing effect the depressed state has on the personality inventories (Zimmerman et al., 1991). Others have reported that interview assessments of personality may be less sensitive to the state effects of depression, than questionnaires (Zimmerman et al., 1991). Some research has used recovered depressives as the sample, because symptom resolution would not interfere with findings. This solution could create an alternative bias, however, as the recovered group would demonstrate less character pathology following treatment. In addition, there is evidence indicating that characterological problems are associated with the chronicity of depression (Weissman & Myers, 1978); therefore, the inclusion of patients who are recovered may further bias the

findings. It is apparent well-controlled studies designed to compare personality pathology in distinct depressive patient groups are needed.

In summary, personality disorders appear to be prevalent in depressed samples. Inpatient and outpatient samples appear to demonstrate important differences including a tendency for inpatients to have personality disorders in the dramatic-erratic categories and outpatients to have personality disorder in the anxious-fearful categories. Comorbidity of depression and personality disorder has been reported to occur frequently, although prevalency rates vary substantially among samples. Future research which improves upon the methodological limitations presented earlier in this paper and that addresses the association between various types of depression and personality disorders should elucidate some of the factors which contribute to the development of comorbid psychiatric disorders.

Overall, the research on personality disorders and BN, substance abuse and depression reveals a tendency for all patient subgroups to exhibit borderline personality disorder or other character pathologies from the dramatic-erratic cluster. However, based on the studies undertaken thus far it appears that substance abuse subjects, as well as, inpatient BN or depressed subjects may be the most likely to display these character traits; while outpatient BN or depressed

subjects tend to demonstrate personality disorders from the anxious-fearful clusters.

Chapter 3: Rationale

Bulimia nervosa is defined in the DSM-III-R by specific core features. Many BN patients also demonstrate additional symptoms associated with other psychiatric disorders such as substance abuse, depression and impulsivity. Few studies to date have closely examined the complex interrelationships among these disorders, although several investigators have speculated on the manner in which these disorders may be related.

Bulimia nervosa has been described as a variant of affective illness by some (Cantwell et al., 1977; Winokur et al., 1980; Hudson, Laffer & Pope, 1982) and an addiction by others (Brisman & Seigel, 1984; Scott, 1983; Sinnott et al., 1983; Casper et al., 1980; Halmi et al., 1981). It is predicted that BN can best be conceptualized as a distinct disorder characterized by specific subtypes.

The factors which contribute to comorbid psychiatric disorders are not well understood. Neither are the factors which distinguish among patients who develop additional psychiatric conditions compared to those suffering solely from BN. It is not known why women with BN are at an increased risk of developing depression or substance abuse rather than schizophrenia.

The aim of this study is to investigate whether BN can be conceptualized as a unique psychiatric disorder, or is best seen as a variant of other psychiatric conditions. This will

be accomplished by examining the factors which are shared among all BN subjects, and those which are specific to subtypes. This information will be obtained by quantifying the severity of bulimic cognitions and the frequency of bulimic behaviours, by means of the Eating Disorder Inventory and Bulimic Symptoms Checklist, and by measuring depressive and other psychiatric symptomatology, by means of the Beck Depression Inventory and the Hopkins Symptom Checklist-Revised (SCL-90-R). Four groups will be compared: 1) BN subjects; 2) BN subjects with depressive disorder; 3) BN subjects with substance abuse disorder; and 4) BN subjects with depressive and substance abuse disorder. The comparisons will determine whether or not BN is best conceptualized as a distinct disorder, regardless of the presence of a comorbid psychiatric condition by identifying the similarities and differences among the groups based on these variables. In addition, this issue will be addressed by two hypotheses which will assess whether comorbidity is best explained by a sickness or a subgroup model.

Previous investigations of affective and substance abuse disorders in this population (Hatsukami et al., 1984; Bulik, 1987) utilized DSM-III criteria for bulimia. Both were exploratory studies which reported on the incidence of these disorders and on related factors such as suicide attempts and Beck Depression Inventory scores. One of the two studies had a small sample of 12 bulimic subjects and neither compared the

eating disorder or psychiatric symptoms among subjects with either depressive or substance abuse disorder, or both, to BN patients without comorbid psychiatric diagnoses. This study will examine these factors using a large sample and according to DSM-III-R criteria. This will be used to determine whether modifications in sample size and diagnostic criteria will result in different findings compared to past studies. Further, it will take previous research in this area one step further, from identifying that comorbid diagnoses of depressive and substance abuse disorders are common in this patient group, to an in-depth examination of the characteristics of BN subjects with and without comorbid psychiatric diagnoses.

This study is also an exploratory investigation of the incidence and manifestations of impulsivity among subtypes of BN subjects. The literature on BN and personality indicates that BN patients are vulnerable to developing character pathology (Yates et al., 1989; Rather & Williamson, 1988; Weisberg et al., 1987), most commonly of the dramatic-erratic and anxious-fearful types. In females with substance abuse disorder, borderline personality disorders are the most frequently diagnosed. In females with depressive disorders the most common personality disorders are in the dramatic-erratic (inpatients) and anxious-fearful (outpatients) clusters. Although some patients with BN are characterized by dramatic-erratic personality disorders, when compared to women with

substance abuse disorder, they meet criteria for these disorders much less frequently (Yates et al., 1990; Derksen, 1990). The high rates of personality pathology, in particular, BPD, in subjects with substance abuse disorder, compared to BN and depressive subjects, suggests that BN patients with comorbid diagnoses for substance abuse, will demonstrate higher rates of impulsive behaviour. Personality disturbance may be a key factor contributing to the comorbidity of BN, depressive and/or substance abuse disorder and by investigating impulsivity in relation to BN subtypes, the associations among these disorders may be better understood. As previously stated, by identifying the psychiatric symptoms and personality traits unique to each BN subtype it is hoped to clarify whether BN is best conceptualized as a unique psychiatric condition, distinct from other disorders.

Chapter 4: Methodology

Subjects

Two hundred and ten women who met DSM-III-R criteria for BN, and who were referred for an assessment for an eating disorder at the Ottawa Civic Hospital, were included in the study. The diagnosis of BN and categorization into subgroups was based on the subjects responses to the BN section of the National Institute of Mental Health Diagnostic Interview Schedule-Revised (NIMH-DIS-R) (Robins, Helzer, Croughan & Ratcliffe, 1981). The BN subjects were divided into four groups based on whether comorbid diagnoses for alcohol or drug abuse or dependence and depressive disorder were made:

- 1) Group 1 is comprised of 52 BN subjects who did not meet criteria for alcohol and/or drug abuse or dependence or depressive disorder;
- 2) Group 2 is comprised of 51 BN subjects who met criteria for substance abuse and/or dependence;
- 3) Group 3 is comprised of 52 BN subjects who met criteria for depressive disorder;
- 4) Group 4 is comprised of 55 BN subjects who met criteria for substance abuse and/or dependence and depressive disorder.

Bulimia nervosa subjects with comorbid psychiatric disorders met DSM-III-R criteria, according to the NIMH-DIS-R, for either alcohol and drug abuse/dependence and/or for a depressive disorder, of Major Depressive Episode, Major

Depression Recurrent, and/or Dysthymic Disorder, within the last six months, for inclusion in the study.

Procedure

The data for this study was derived retrospectively from the case files of patients who were assessed and offered treatment at the Ottawa Civic Hospital, Eating Disorders Clinic, between 1985 and 1992. Less than 1% of all patient files were not included in the sample. The missing cases consisted of patients who dropped out or failed to complete the assessment for an unknown reason. Subjects were sent a standard, pre-treatment package consisting of the Personal and Family Medical History (PFMH) questionnaire and the Diagnostic Schedule of Eating Disorders, which were to be completed and returned at the time of their first visit. The initial assessment was conducted by a psychometrist, trained in the evaluation of eating disorders, and consisted of the following standardized paper and pencil and computerized tests: 1) the Beck Depression Inventory (BDI), 2) the computerized National Institute of Mental Health Diagnostic Inventory (NIMH-DIS), 3) the Hopkins Symptom Checklist Revised (SCL-90-R), 4) the Eating Disorder Inventory (EDI) and 5) the Bulimic Symptoms Checklist (BSC). In addition, each patient underwent a clinical interview pertinent to the eating disorder, conducted by the psychometrist, and a nutritional assessment by the dietician.

The psychological instruments to be utilized in this study include the following:

- 1) The National Institute of Mental Health Diagnostic Interview Revised (NIMH-DIS-R). This diagnostic instrument is a standardized interview which provides Axis I psychiatric diagnoses. A computerized version of this instrument (C-DIS-R) was utilized in this study, to classify BN subjects by subgroup as well as to report on any additional Axis I symptomatology demonstrated in the sample. The NIMH-DIS-R has been shown to have acceptable reliability and validity, as has the computerized version (C-DIS) employed in this study (Blouin, Perez, & Blouin, 1988). The C-DIS reliability has been reported to average .57 (kappa value) across diagnostic categories (Blouin, 1990).
- 2) The Diagnostic Schedule of Eating Disorders (DSED). The DSED is a self-report inventory consisting of 12 sections which provides information on demographics, weight history and body image, dieting, binge eating, purging, exercise behaviours, sexual functioning, menstruation and life adjustment (Johnson, 1985). Three measures from the DSED will be used as indices of impulsivity: 1) age of first sexual experience; 2) number of suicide attempts; 3) engagement in self-injurious behaviours.
- 3) Eating Disorder Inventory (EDI). The EDI is a 64-item self-report inventory used to measure bulimic symptoms and psychological and behavioral dimensions associated with BN and

anorexia nervosa (AN). The instrument contains 8 subscales including: bulimia, drive for thinness, body dissatisfaction, interoceptive awareness, ineffectiveness, maturity fears, perfectionism, interpersonal distrust. The reliability and validity of this instrument has been well established (Garner, Olmsted & Polivy, 1983).

4) Beck Depression Inventory (BDI). The BDI is a 21-item self-report instrument which assesses cognitive and behavioral symptoms of depression. The BDI has been demonstrated to have high levels of internal consistency and convergent validity (Beck, Ward, Mendleson, Mock & Erbaugh, 1961).

5) Symptom Checklist-90 Revised (SCL-90-R). The SCL-90-R is a 90-item self-report measure designed to assess psychiatric symptomatology on 9 scales, including somatization, obsessive-compulsive, depression, anxiety, paranoid ideation, psychoticism, anger, hostility, interpersonal sensitivity and phobic anxiety. The reliability and validity of this instrument has been well established (Parloff, Kelman & Frank, 1954; Rickles, Garcia & Lipman, 1976; Glass, Allen, Uhlenhuth, Kimball & Borinstein, 1978; Derogatis, 1979).

6) Bulimic Symptoms Checklist (BSC). The BSC is a self-report instrument which measures the severity of bulimic symptoms (Blouin et al., 1988). It assesses the frequency of bingeing and purging behaviours and the degree to which subjects rank the severity of their bingeing and purging, their

preoccupation with food; their lack of control with relation to food and the overall severity of their symptoms.

Research Design

The study design is a 2 x 2 (alcohol and drug abuse/dependence x depressive disorder) multivariate design with five dependent variable groups (demographic, weight, eating disordered, psychiatric and personality style variables). Bulimic patients were assigned to groups based on whether they met criteria for alcohol and/or drug abuse/dependence and/or depressive disorder based on responses to the C-DIS-R (see appendices).

Statistical Analyses

The data were organized using summary sheets and entered using the Statistical Package for the Social Sciences, Version x (SPSSx). Next, the data were examined for outliers and skewedness and further organized by categorizing cases according to whether subjects met diagnostic criteria for alcohol and/or drug abuse/dependence and/or depressive disorder. Prior to conducting statistical analyses several data distributions were transformed due to lack of normality. The transformations were undertaken according to procedures described in Tabachnick and Fidell (1989). Nine transformations of the data were performed in total. Inverse transformation was applied to the variables present weight and ineffectiveness, logarithm transformation to highest past

weight and bulimia, reflect and inverse transformation to frequency of vomiting and diuretic and laxative abuse and square root transformation to psychoticism and body dissatisfaction. Assumptions of normality, homogeneity of variance-covariance matrices, linearity and multicollinearity were met for all the data following these modifications.

The statistical analyses conducted included, first, a series of analyses of variance of the following descriptive and clinical characteristics: (1) age, (2) number of years bingeing (3) number of years purging and (4) Beck Depression Inventory scores. Second, two chi square analyses were performed for two categorical variables: socioeconomic status and marital status. Next, a series of 5 multivariate analyses of variance (MANOVA) were performed with the following variables: (1) weight history variables derived from the DSED items present weight, present height, highest past weight, lowest past weight and subjective ideal weight, (2) bulimic cognitions and behaviours as measured by the EDI subscale scores, (3) bulimic symptom severity derived from BSC items, (4) general psychiatric symptom severity as measured by the SCL-90-R subscale scores, and (5) personality style derived from the impulsivity items: age of first sexual experience, suicide attempts and engaging in self-injurious behaviour. Significant results from the series of multivariate analyses of variance were further analyzed using discriminant function analyses.

Chapter 5: Results

The descriptive characteristics of the sample appear in Table 1. The women averaged 25.5 years of age, with an average weight of 137.3 lbs and height of 5 ft. 4 inches. They reported bingeing on average 6.8 times weekly, vomiting 6.4 times weekly, and using laxatives or diuretics 2.8 times weekly. The most frequent socioeconomic status background reported, according to Hollingshead's Two Factor Index of Social Position, was level 2. This status corresponds to business managers, proprietors of medium-sized businesses, and lesser professionals, for example nurses or teachers. According to their responses to the NIMH-DIS-R, no subjects in group 1 (BN only) met criteria for either depressive or substance abuse disorder, however, 37 (72.5%) subjects in group 2 (BN and substance abuse) met current criteria for alcohol abuse, 40 (78.4%) met current criteria for alcohol dependence, and 24 (47.1%) met current criteria for drug dependence. Twenty-six (50%) subjects in group 3 (BN and depression) met current criteria for major depressive episode, 28 (53.8%) met current criteria for major depression recurrent, and 13 (25%) met current criteria for dysthymic disorder. In group 4 (BN, substance abuse and depression), 39 (70.9%) met current criteria for major depressive episode, 31 (56.4%) for major depression recurrent, 14 (25.5%) for dysthymic disorder, 40 (72.7%) for alcohol abuse, 43 (78.2%)

for alcohol dependence and 18 (32.7%) for drug abuse. The incidence of psychiatric disorders among the four groups

Insert Table 1 about here

according to NIMH-DIS is reported on in Table 2. The BN only group and BN and depression group demonstrated the lowest frequency of additional psychiatric disorders. The most frequently reported current subsequent diagnosis in all groups was social phobia. Thirty-three percent met criteria for this disorder in the BN only group; 23.1% in the BN and depression group; 47.1% in the BN and substance abuse group; 49.1% in the BN, substance abuse and depression group. The BN and substance abuse group demonstrated a greater number of concurrent psychiatric conditions than the two groups without a substance abuse disorder, but fewer than the group which met criteria for both substance abuse and depressive disorder.

Insert Table 2 about here

The original sample consisted of 210 female subjects. The distribution of subjects among the various groups was as follows: 1) BN only - 52 subjects; 2) BN and substance abuse - 51 subjects; 3) BN and depressive disorder - 52 subjects; 4) BN, substance abuse and depressive disorder - 55 subjects. Prior to conducting multivariate analyses, the distributional

properties of the data were examined. Extreme scores on the following variables resulted in 9 cases being deleted: subjective ideal weight, global severity of eating disorder symptoms, obsessive-compulsiveness, anger/hostility, maturity fears, ineffectiveness and interpersonal distrust. Sample size was reduced to 201 subjects following the deletions. A lack of normality in several distributions necessitated the application of 9 transformations of the data.

The statistical analyses employed in this investigation included four analyses of variance, two chi square analyses, and five multivariate analyses of variance. This study was conceptualized as a 2 x 2 multivariate design with two independent variables (IV), with the two levels defined as follows: depressive disorder - positive or negative diagnosis; substance abuse disorder - positive or negative diagnosis. SPSSx was used for all statistical analyses.

Demographic and Weight History Variables

One analysis of variance was performed by type of disorder for age. No statistically significant interaction between the independent variables, depression and substance abuse was observed ($F(1,209)=.152,ns$). Neither was there a significant main effect of depression on age ($F(1,209)=.064,ns$) (see Table 3). However, as can be observed in Figure 1, subjects with a diagnosis of substance abuse, with or without a depressive disorder, were significantly

older than groups without a substance abuse problem ($F(1,209)=5.2, p<.02$). Bulimia nervosa subjects with comorbid

Insert Table 3 about here

diagnoses of substance abuse were, on average, between 26.5 years of age, whereas, those without this disorder were, on average, 24 years of age, at the time of assessment.

Insert Figure 1 about here

Chi square analyses with the following categorical variables demonstrated no differences between groups on socioeconomic status, for either BN subjects with depression ($\chi^2=.362, df=2, 150, ns$) or substance abuse ($\chi^2=1.58, df=2, 150, ns$), or on marital status for either depression ($\chi^2=.385, df=2, 150, ns$) or substance abuse ($\chi^2=1.85, df=2, 150, ns$) (Table 3).

Results of the two analyses of variance for number of years of bingeing and vomiting indicated statistically significant differences depending on type of comorbid psychiatric disorder. No interaction effects were found between depression and substance abuse in relation to the variables chronicity of bingeing ($F(1,176)=1.067, ns$) or vomiting ($F(1,130)=.514, ns$). Neither were significant main

effects revealed between depression and chronicity of bingeing ($F(1,176)=.226, ns$) and vomiting ($F(1,130)=.043, ns$) (see Table 3). However, number of years of bingeing was significantly longer in groups with a comorbid diagnosis of substance abuse (see Figure 2). As can be observed from Figure 2, BN subjects with a substance abuse disorder reported bingeing, on average,

Insert Figure 2 about here

9.5 years, while BN subjects without substance abuse disorders reported engaging in bingeing, on average, 6 years ($F(1,176)=14.5, p<.01$). Similarly, the number of years of vomiting was reported to be higher in the BN groups with substance abuse disorder ($F(1,130)=21.1, p<.01$) (see Figure 3). On average, BN subjects with substance abuse disorders had been vomiting for 8 years while BN patients without substance abuse disorders reported vomiting for 4 years.

Insert Figure 3 about here

A multivariate analysis of variance (MANOVA) was performed on the following weight variables: present weight, present height, lowest past weight, highest past weight, and subjective ideal weight. No main effects from either depressive disorder ($F(1,160)=.86, ns$) or substance abuse

($F(1,160)=.028, ns$) disorder, nor from their interaction ($F(1,160)=.57, ns$) were revealed (see Table 3).

Clinical Symptoms

One analysis of variance was performed on clinical symptom scores from the Beck Depression Inventory (BDI). No significant interaction effects between depression and substance abuse were revealed in relation to BDI total scores ($F(1,187)=.011, ns$). Main effects were found for depression ($F(1,187)=9.9, p<.002$) and substance abuse ($F(1,187)=8.4, p<.004$) (see Table 4). As is apparent in Figure 4, BN subjects with substance abuse disorders reported the

Insert Table 4 about here

most extreme scores of depression, while groups without substance abuse disorders reported statistically significant

Insert Figure 4 about here

lower total BDI scores. In Figure 5, it can be observed that BN subjects with depressive disorders also report higher mean BDI scores than subjects who did not meet criteria for depression.

Insert Figure 5 about here

A series of four multivariate analyses of variance were performed using eating disordered variables and psychiatric symptomatology. The eight subscales of the Eating Disorder Inventory (EDI) and the 7 factors of the Bulimic Symptoms Checklist (BSC) comprised the variables included in the two MANOVA's conducted to differentiate among the four groups on eating disordered characteristics. The combined dependent variables (DV) from the BSC were significantly affected by depressive disorder ($F(1,150)=2.08, p<.03$), but not by substance abuse disorder ($F(1,150)=.939, ns$), or by their interaction ($F(1,150)=.726, ns$) (see Table 4). In Table 5, the BSC subscale scores are presented. Number of vomiting episodes

Insert Table 5 about here

per week was the only significant subscale factor ($F(1,150)=4.29, p<.04$). Mean frequency of vomiting episodes per week (see Figure 6) was highest in BN groups with comorbid diagnoses of depression. To investigate the relation between depressive disorder and the individual DVs, a discriminant

Insert Figure 6 about here

function analysis was conducted (see Table 9). A unique contribution to predicting differences between those with a diagnosis of depressive disorder and those without was made by

frequency of vomiting ($F(1,152)=4.43, p<.04$), at Step 1, followed by subjective severity of vomiting, ($F(1,152)=5.35, p<.006$), subjective severity of purging, ($F(1,152)=4.22, p<.007$), frequency of laxative and diuretic use, ($F(1,152)=3.73, p<.006$), global severity of eating disordered symptoms, ($F(1,152)=3.36, p<.006$), and binge frequency, ($F(1,152)=3.02, p<.008$).

The EDI MANOVA yielded similar results. The combined Dvs were significantly affected by the main effect of depressive disorder, ($F(1,174)=2.78, p<.006$), but not by substance abuse disorder ($F(1,174)=1.43, ns$) or by an interaction ($F(1,174)=1.04, ns$) among the two IVs (see Table 4). As can be seen in Table 6, one subscale from the EDI, ineffectiveness, was statistically significant ($F(1,174)=12.30, p<.001$). Figure 7 displays the mean ineffectiveness scores for the two groups. Groups with comorbid diagnoses for depressive disorder,

Insert Table 6 about here

compared to groups without depressive disorder, reported higher ineffectiveness scores on this measure. A discriminant function analysis was employed to investigate the impact of

Insert Figure 7 about here

depression on the EDI subscales. A unique contribution to predicting differences among those with or without a depressive disorder was statistically significant for the following subscales: ineffectiveness, ($F(1,176)=6.63, p<.0003$) and interpersonal distrust, ($F(1,176)=5.40, p<.0004$) (Table 9).

Insert Table 7 about here

Two MANOVAs were employed to compare psychiatric symptomatology among the groups, specifically, for the 9 subscale scores of the SCL-90-R and responses to the impulsivity items: history of suicide attempts, self-injurious behaviours and age at first sexual experience. The original examination of the role of impulsivity was conceived to include when alcohol and drug problems began in relation to the eating disorder; however, much of this data was missing from the data files, requiring that this factor be dropped from the analyses.

In the first multivariate analysis performed on the SCL-90-R, the combined Dvs were affected by both depressive disorder, ($F(1,174)=2.76, p<.005$), and substance abuse disorder, ($F(1,174)=2.01, p<.04$), but no interaction effect ($F(1,174)=1.21, ns$) was found (see Table 4). Table 7 lists the SCL-90-R subscales and their significance levels for both substance abuse and depression. As is apparent, all subscale scores for substance abuse groups were statistically different

from groups without substance abuse disorder. In contrast, only the depression subscale score was statistically significant for groups with comorbid diagnoses of depression. Figure 8 depicts the mean depression subscale scores for BN with and without depressive disorders ($F(1,174)=10.8, p<.001$). Figure 9 shows the mean depression subscale scores for groups with and without substance abuse disorders ($F(1,174)=.787, p<.006$). Figure 10 represents the eight other subscales of the SCL-90-R. By examining this figure it is evident that the groups with comorbid diagnoses of substance abuse have remarkably higher scores on all psychiatric symptomatology, as measured by the SCL-90-R. To investigate

Insert Figures 8 to 10 about here

the impact of each main effect on the individual DVs, discriminant function analyses were performed. The first DFA included the SCL-90-R subscale depression in the analysis and the results indicated this factor made the most unique contribution in predicting between those with depressive disorder and those without such a disorder. This finding was expected since lifetime presence of depression was the defining characteristic of these groups. As a result a second DFA was conducted which excluded the depression subscale. The findings revealed no significant findings with depression removed from the analysis (see Table 9). A third DFA

demonstrated the unique contribution of predicting differences between subjects with and without substance abuse disorder made by anxiety, ($F(1,176)=13.7, p<.0003$), as well as by anger/hostility, ($F(1,176)=8.14, p<.0004$) (see Table 10).

The final MANOVA conducted to investigate personality style differences among groups as measured by impulsivity items revealed a trend indicating that the combined DVs were affected by substance abuse disorder, ($F(1,132)=2.25, p<.085$) (see Table 4). The results of the MANOVA for the impulsivity subscales demonstrate significant differences between groups for a history of suicide attempts ($F(1,132)=4.71, p<.03$) and a trend for age at first sexual experience ($F(1,132)=3.41, p<.07$). No statistically significant differences were found for self-injurious behaviour ($F(1,132)=1.40, ns$) (see Table 8). In Figure 11, the mean age

Insert Table 8 about here

of first sexual experience is depicted graphically. It reveals that BN subjects with comorbid diagnoses of substance abuse

Insert Figure 11 about here

were younger, on average, 16.5 years of age, at the time of their first sexual experience, compared to those without substance abuse disorders who, on average, were aged 17.5.

Insert Table 9 about here

In Figure 12, the mean suicide attempt scores for all groups are represented. This item was coded as follows: a score of one denoted that a subject had attempted suicide at least once in her life; a score of two denoted no attempt at suicide had ever been made. As can be observed in Figure 12, subjects with comorbid diagnoses of substance abuse disorder were more

Insert Figure 12 about here

likely to have attempted suicide. A DFA demonstrated that differences among those with and without substance abuse disorder could be predicted by history of suicide attempts, ($F(1,132)=4.87, p<.03$), followed by age at first sexual experience, ($F(1,132)=3.48, p<.03$) (see Table 10).

Insert Table 10 about here

In sum, the subgroups of BN patients appear to be similar in demographic profile and weight history. Differences among the groups emerged in relation to age and eating disordered characteristics. Long histories of bingeing and purging were found in subjects with a concurrent diagnosis of substance abuse. Subjects with a depressive disorder demonstrated more

extreme eating disordered behaviour and cognitions compared to those with no depressive disorder. In terms of psychiatric symptoms, the results of the BDI indicated that BN subjects with both substance abuse and depressive disorder suffer from depressive symptomatology. A diagnosis of substance abuse was found to predict high scores on all subscales of the SCL-90-R questionnaire. Only a significant subscale score of depression on the SCL-90-R was related to a comorbid diagnosis of depressive disorder. Finally, impulsivity scores were highest among BN with substance abuse disorder and were most strongly predicted by attempts at suicide and earlier sexual experiences.

Chapter 6: Discussion

The major purpose of this study was to investigate whether BN is best conceptualized as a distinct psychiatric disorder or a variant of an affective, addictive or impulsive behaviour disorder. This was to be accomplished by delineating the characteristics of BN subjects with and without the secondary psychiatric conditions of substance abuse and/or depressive disorder. It is interesting to note that of the 210 consecutive BN patient files, each of the four groups represented 25% of the sample. As this case division occurred naturally through the data collection process, it suggests that this distribution is indicative of the manner that these disorders are present in BN outpatient samples in general.

Several statistically significant differences among the groups were identified providing support for the conceptualization of BN as a distinct psychiatric disorder. Subject groups were differentiated based on demographic, weight history, eating disordered characteristics and psychiatric symptomatology. All subjects exhibited the characteristics common to BN, although there were some noteworthy differences in terms of frequency and severity of these symptoms among the subgroups.

In this section of the paper, a review of the results in relation to previous research, the hypotheses under investigation, and the theoretical and practical implications of the findings will be discussed. This will be presented in

the following subsections: 1) Depression, 2) Substance Abuse, 3) Comorbidity, and 4) Impulsivity. Finally, the limitations of the study and suggestions for future research as well as final conclusions will be presented.

Depression

Bulimia nervosa subjects with a depressive disorder were undifferentiated from those without in terms of demographics and weight histories. These findings are consistent with previous research describing BN samples as quite homogeneous on demographic (Hatsukami et al., 1983; Beary et al., 1986; Mitchell et al., 1988; Sansone et al., 1994) and weight history factors (Hatsumkami et al., 1983; Beary et al., 1986; Sansone et al., 1994). Compared to BN subjects with substance abuse disorders, however, BN subjects with and without a depressive disorder were significantly younger.

Differences between BN subjects with a depressive disorder and all other subjects were found in terms of eating disordered characteristics. Subjects with a depressive disorder reported higher rates of vomiting and more extreme feelings of ineffectiveness compared to other subgroups. Differences among subtypes according to the Eating Disorder Inventory (EDI) were found in one past study which compared bulimic subjects with and without a history of substance abuse, however, depression was not controlled (Lundholm, 1989). Nonetheless, eating disorder patients with substance abuse problems were found to have higher scores on

interoceptive awareness, ineffectiveness, maturity fears, interpersonal distrust and bulimia than those without. These findings are in contrast to those of the present study which found BN patients with substance abuse problems were not distinct from the BN patients without a substance abuse disorder on these factors. This discrepancy therefore could be interpreted to be the result of the lack of control for the effect of depression, in Lundholm's study.

Previous research has identified high rates of depression in BN patients (Russell, 1979; Johnson et al., 1982; Herzog, 1984; Lee et al., 1985; Viesselman & Roig, 1985; Levy et al., 1989). The Beck Depression Inventory (BDI) used in this investigation to assess depressive symptoms has only been utilized in a few studies examining the link between BN and affective disorder. In this study, the BN subjects with a depressive disorder had the highest rates of depression compared to all other BN subjects, according to both the BDI and SCL-90-R results.

Overall, BN subjects with comorbid diagnoses of depressive disorder are similar to those without a depressive disorder in terms of age, SES and marital status. They can be distinguished from other BN subtypes in that they demonstrate the most severe eating disordered behaviour and cognitions. This group is also characterized by severe depressive symptoms, however, it is not differentiated from the non-depressed groups in more general psychiatric symptomatology.

Substance Abuse

The findings of the demographic variable analyses revealed that BN women with substance abuse disorders were on average older by two to three years than all other subtype groups. Age may be important in the identification of BN subjects with substance abuse disorder, in particular, in relation to the onset and/or chronicity of BN in these patients.

The present investigation did not obtain information on onset of the disorder, however, the chronicity of bingeing and purging was examined across groups of BN subjects. Number of years of bingeing and purging were significantly longer in BN groups with substance abuse disorder suggesting that the older BN subjects with comorbid diagnoses of substance abuse may have a similar age of onset compared to other BN patients, but suffer from the eating disordered behaviour for a longer period of time prior to seeking help for this problem. No previous research has reported investigating chronicity of bingeing and vomiting in relation to subgroups. Given the primary importance of this feature in diagnosing BN, and the evidence from this study that this factor differentiates BN subtypes, replication of these findings needs to be undertaken. At a practical level in the assessment of BN patients, clinicians should evaluate more closely older patients - those who are 25 years of age or more - for alcohol

and/or drug abuse or dependence problems as a means of prevention or earlier treatment for substance abuse.

Bulimia nervosa patients with substance abuse disorder as well as substance abuse patients have been reported to display significant difficulties with depression (Hatsukami et al., 1982; Schukit, 1983; Butterfield & Leclair, 1988; Merikangas & Gelernter, 1990). The results of the present study are consistent with past findings. Extreme scores on the BDI were reported by the BN subjects with substance abuse disorder. Bulimia nervosa subjects with no substance abuse disorder were less depressed. These findings are in contrast to Butterfield and LeClair's (1988) findings which found that bulimic subjects compared to substance abusers had higher rates of depression. This discrepancy could have been confounded by the presence of uncontrolled depressive disorders in the sample, which could have lead to premature conclusions about depression in BN samples.

Bulimia nervosa subjects with substance abuse disorder were also differentiated from other subject groups by extremely high scores on all levels of the Hopkins Symptom Checklist (SCL-90-R). High scores on anxiety and anger/hostility dimensions were particularly strong predictive factors of membership in this group. No research to date has been undertaken which has directly compared the incidence of general psychiatric symptomatology in these BN subgroups. However, one study which used the MMPI reported some similar

findings (Hatsukami et al., 1982), including the tendency for both groups to be depressed and socially withdrawn and for BN with substance abuse problems to be unpredictable, impulsive, unstable and prone to acting-out.

Overall, BN subjects with a substance abuse disorder demonstrate similar demographic profiles and eating disorder characteristics, compared to BN subjects with no substance abuse problems. This subtype differs in several significant ways, however. They tend to be older on average by two years and to have binged and purged for almost double the number of years compared to non-substance abusing BN subjects. Further, this subtype tend to be more depressed than the BN subjects without substance abuse problems and they tend to exhibit high levels of general psychopathology, in particular anxiety and anger, compared to non-substance abusing BN subjects.

Comorbidity

A second objective of this investigation was to examine which of two models would best explain the comorbidity of psychiatric disorders in this patient population. The two models to be compared were classified as the subtype model and the sickness model. These models were to be used to further clarify whether BN is best conceptualized as a unique disorder or a variant of another condition. The subtype model hypothesized that specific subtypes demonstrate unique characterological profiles and that these specific traits can be used to predict the development of subsequent psychiatric

disorders. In contrast, the sickness model stated that subjects who exhibit the greatest frequency and severity of psychiatric symptoms or disorders will be at an increased risk of developing subsequent psychiatric disorders. The latter hypothesis was based on the theory submitted by Boyd and colleagues (1984) that states if an individual has a psychiatric disorder the odds increase that she will develop another disorder, which may or may not be related to the first. The overall evidence from the present investigation found the subtype model best explained the comorbidity of psychiatric disorders.

No significant interaction effects were found between the factors, depression and substance abuse for any of the dependent variable groups. Each independent factor was associated with a specific subtype of BN subject, however. These findings support the conceptualization of bulimia nervosa as a unique psychiatric condition characterized by subtypes rather than as a variant of depressive, addictive or impulsivity disorder. If BN was appropriately depicted as a variant of another psychiatric condition no subgroup distinctions would have been revealed. Similarly, the severity of overall psychopathology would have increased, equally across groups, as the number of comorbid psychiatric conditions increase, as was predicted by the sickness model. Instead, distinct types of BN subgroups emerged.

Bulimia nervosa subgroups were delineated according to whether or not a comorbid diagnosis of depression or substance abuse was present. As has been previously presented, subjects with comorbid diagnoses of depression are distinguished from other BN subjects on the basis of severity of eating disordered behaviours and cognitions, as well as depressive symptomatology. Whereas, BN subjects with substance abuse disorders are older, have binged and purged for a greater number of years and suffer from higher rates of general psychopathology. Clearly, two distinct subgroups of BN subjects have been identified, which can be further distinguished from BN subjects without comorbid diagnoses of depression or substance abuse disorder. Bulimia nervosa subjects without comorbid psychiatric conditions present as relatively free from additional psychiatric symptoms.

Overall, it appears that having one psychiatric condition may place some individuals at an increased risk of developing a second condition. However, the results suggest that subtypes, which are distinct on the basis of a number of clinical factors, have characteristics which may better predict the development of a specific psychiatric disorder.

Impulsivity

A third objective of this investigation was to examine the incidence of impulsivity in each group. This was to ascertain whether those with substance abuse disorder would display impulsive behaviour more frequently than the other BN

patients. This hypothesis was made based on research in the areas of both bulimia nervosa and substance abuse which indicated that patients with a primary or comorbid diagnosis of substance abuse disorder have an increased tendency to display problems with impulsivity, suggesting personality pathology (Lacey & Evans, 1986). As well, it is premised on the literature on BN outpatients with personality disorders and depression that indicates these patients present with high rates of impulsivity (Tryer et al., 1983; Shea et al., 1987; Sanderson et al., 1992). The results of the present investigation support the previous findings that BN subjects who had comorbid diagnoses of alcohol and/or drug abuse, compared to other subgroups, are more likely to demonstrate problems with impulsivity, in particular in terms of frequent suicide attempts and early involvement in sexual activity.

These findings are also similar to a study which found (Yates et al., 1989) BN subjects with personality disorders were more likely to have histories of suicide attempts than those who did not demonstrate character pathology. Likewise, studies of depressed samples have found that personality disorders tend to be linked to suicide attempts (Friedman et al., 1983; Pfohl et al., 1984). In addition, recently Sansone and colleagues (1994) undertook a study of impulsivity and personality pathology in eating disordered and substance abuse patients. This group reported that subjects with both disorders were more likely to meet criteria for Borderline

Personality Disorder (BPD) and to engage in self-harm behaviours. Several studies have also documented higher rates of BPD in substance abuse patients (Nace, 1989; Koenigsberg et al., 1985) compared to in BN (Pope et al., 1987; Levin & Hyler, 1986; Piran et al., 1988; Wonderlich et al., 1989) and depressive samples (Tyrer et al., 1983; Pfohl et al., 1984). No direct claim can be made that BN subjects with substance abuse disorder also suffered from BPD or another character disorder because personality pathology was not assessed by means of a standardized measure. However, high rates of self-harm behaviours and general psychopathology in this group, combined with the similarities of the present findings with those of previous investigations, suggests that it may be the case. Subsequent research will need to be undertaken to substantiate this claim.

Limitations and Future Studies

There are several limitations of this study which need to be addressed. First, in terms of the actual sample, this was a retrospective study which necessitated that the subjects be drawn from existing files. As a result, some data were missing for specific instruments, in particular, for DSM-III-R diagnoses, as the DSM-III criteria for psychiatric disorders was the standard for diagnosis in over 25% of the sample. Although it was possible to determine that the subjects diagnosed with DSM-III bulimia also met criteria for DSM-III-R BN by using other documentation contained in the patient file,

it was impossible to do so for substance abuse disorder. In addition, information on the severity of the substance abuse disorder could not be obtained for all the subjects in the study. As a result, the subjects comprising the substance abuse groups included mild, moderate and severe alcohol and drug abusers in order to have adequately sized comparison groups. This range in degree of substance abuse problems, as well as the type of substance abuse problem (i.e. poly-drug versus uni-drug abuse) may limit the generalizability of the findings to all types of substance abuse. Similarly, given that some of the subjects were active substance abusers at the time of assessment, it is possible that the results were influenced directly by current chemical use. Studies have demonstrated that psychopathology in substance abusing patients often decreases substantially once a person abstains from alcohol or drug use regardless of whether or not treatment is received (Rounsaville et al., 1980).

Conclusions

The results of this investigation support the conceptualization of bulimia nervosa as a distinct psychiatric disorder, rather than a variant of an affective, addictive or impulsivity disorder. Some BN patients do exhibit depressive disorders, while others have substance abuse disorders and still others demonstrate impulsive tendencies. Some demonstrate none while others have all of these disorders. Such variance in the types of comorbid disorders evidenced in

this patient population suggests it would be inappropriate to classify BN as a substrate of any of the associated disorders as the only element common to all patients is the eating disorder itself.

The subgroups investigated in this study demonstrated similar, yet quite unique clinical profiles. The subjects with BN only were characterized by the primary features of BN and appeared free from other psychopathologies. Those with a depressive disorder were differentiated from other subtypes in that they had the most extreme depressive symptoms and eating disordered cognitions and behaviours. Those with a substance abuse disorder were the oldest, had the longest histories of bingeing and purging, had problems with depression and were pan-symptomatic on psychiatric sequelae. Approximately 50% of the sample demonstrated impulsive behaviour problems. This group of subjects also had substance abuse disorders, and some had depressive disorders. Based on previous research and theory, it is probable that the substance abusing subtypes of BN also suffer from character pathology, perhaps borderline personality disorder.

In this study, it was revealed that all BN subjects exhibit the standard characteristics which define this psychiatric disorder. Differences among the subgroups occur depending on whether a comorbid psychiatric disorder is present and on the type of disorder. Rather than describing eating, depressive, substance abuse and impulsivity disorders

as similar because they sometimes present together, it appears to be more appropriate to examine the relationship among co-occurring disorders and the nature of the disorder when it appears in isolation. This approach may limit the potential for erroneous definitions of psychiatric disorders to be developed, which could lead to a multitude of subsequent issues, including inappropriate diagnosis and treatment. It may also provide a framework to analyze how the manifestations of the original disorder vary when two or more psychiatric conditions are present.

The subtype model of comorbidity provided the best explanation of comorbid disorders, in this subject sample. The Boyd et al., (1984) hypothesis that having a psychiatric disorder may increase the risk of developing a second as a theory of comorbidity may be one aspect of an adequate explanation of comorbidity. Other factors such as the severity and frequency of specific clinical characteristics defining certain psychiatric conditions appear to provide a more comprehensive explanation of the manner by which bulimia nervosa, substance abuse and depression co-occur in BN patients.

The findings indicate that bulimia nervosa is best conceptualized as a distinct disorder. However, subtypes of the disorder, in particular, depressive and substance abuse groups are common, in up to 25% to 50% of BN samples. Practically, this suggests that clinicians need to be aware of

the frequent comorbidity of these disorders and as a result ensure treatment includes addressing the multiplicity of issues presented by some BN patients.

Table 1

Descriptive Characteristics of the Sample (N=210)

Variable	Mean	Standard Deviation
<hr/>		
Age	25.5	7.0
Socio-Economic Status (Hollingshead) *	2.0 (mode)	
Weight (lbs.)	137.2	33.5
Height (inches)	64.5	2.7
Binges per week	6.8	6.2
Vomiting per week	6.4	8.4
Purgatives per week	2.8	9.4

*Professional Occupation=2.0

Table 2

Incidence of Psychiatric Disorders Among Patient Groups*

Psychiatric Diagnosis	BN	BN/Substance Abuse (SA)	BN/Depression (DEP)	BN/SA/DEP
Alcohol Abuse	-	72.0%	-	72.7%
Alcohol Dependence	-	78.4%	-	78.2%
Drug Abuse	-	47.0%	-	32.7%
Major Depressive Episode	-	-	50.0%	70.0%
Major Depression Recurrent	-	-	53.8%	56.4%
Dysthymic Disorder	-	-	25.0%	25.5%
Agoraphobia	7.7%	11.8%	11.5%	20.0%
Social Phobia	33.0%	47.1%	23.1%	49.1%
Simple Phobia	10.0%	29.4%	23.1%	41.8%
Generalized Anxiety Disorder	11.5%	17.6%	9.6%	9.1%
Somatization	-	27.5%	-	32.7%
Post-Traumatic Stress Disorder	-	17.6%	-	14.5%
Panic Disorder	-	-	-	21.8%

*Percentages represent diagnoses at time of assessment,
according to DSM-III-R criteria.

Table 3

Univariate and Multivariate Analyses of Variance for
Demographic and Weight History Factors by Type of Disorder

Factors	Depression			Substance Abuse		
Measures	F	DF	P<	F	DF	P<
Age	0.060	1,209	ns	5.20	1,209	.02**
Chronicity of Bingeing	0.640	1,176	ns	14.50	1,176	.01**
Chronicity of Purging	0.840	1,130	ns	21.10	1,130	.01**
Weight History	0.028	1,160	ns	0.86	1,160	ns
	X ²	DF	P<	X ²	DF	P<
Socio-Economic Status	0.362	2,150	ns	1.58	2,150	ns
Marital Status	0.385	2,150	ns	1.85	2,150	ns

Table 4

Univariate and Multivariate Analyses of Variance for
Clinical Factors by Type of Disorder

FACTOR	SUBSTANCE ABUSE & DEPRESSION			SUBSTANCE ABUSE			DEPRESSION		
	F	DF	P<	F	DF	P<	F	DF	P<
Beck Depression Inventory (BDI)	-	-	-	9.90	1,187	.002**	8.40	1,187	.004**
Bulimic Symptom Checklist	7.26	1,150	ns	0.94	1,150	ns	2.08	1,150	.03*
Eating Disorder Inventory	1.04	1,174	ns	1.43	1,174	ns	2.78	1,174	.006**
SCL-90-R	1.21	1,174	ns	2.01	1,174	.04*	2.76	1,174	.005**
Impulsive Items	0.31	1,132	ns	2.25	1,132	.085*	0.83	1,132	ns

Table 5

Multivariate Analyses of Variance by Groups with Depressive Disorder for Bulimic Symptom Checklist Scores

Bulimic Symptom Checklist Subscales	Depression		
	F	DF	P<
Binges/Per Week	1.910	1,150	ns
Severity of Binges	0.130	1,150	ns
Vomiting/Per Week	4.290	1,150	.04*
Severity of Vomiting	0.322	1,150	ns
Purgatives/Per Week	0.233	1,150	ns
Severity of Purgation	1.920	1,150	ns
Preoccupation with Food	0.550	1,150	ns
Lack of Control	0.960	1,150	ns
Global Severity of Symptoms	2.070	1,150	ns

Table 6

Multivariate Analyses of Variance by Groups with Depressive Disorder on Eating Disorder Inventory (EDI) Scores

Eating Disorder Inventory Subscales	Depression		
	F	DF	P<
Drive for Thinness	2.220	1,174	ns
Interceptive Awareness	0.852	1,174	ns
Bulimia	0.253	1,174	ns
Perfectionism	0.237	1,174	ns
Interpersonal Distrust	0.043	1,174	ns
Body Dissatisfaction	0.635	1,174	ns
Ineffectiveness	12.300	1,174	.001**
Maturity Fears	1.390	1,174	ns

Table 7

Multivariate Analyses of Variance by Groups with Substance Abuse and/or Depressive Disorder for the Hopkins Symptom Checklist (SCL-90-R)

SCL-90-R Subscales	Substance Abuse (SA)			Depression (DEP)		
	F	DF	P<	F	DF	P<
Somatization	8.31	1,174	.004**	0.004	1,174	ns
Interpersonal Sensitivity	5.94	1,174	.02*	2.440	1,174	ns
Anxiety	13.19	1,174	.001**	0.643	1,174	ns
Psychoticism	6.97	1,174	.009**	0.338	1,174	ns
Obsessive- Compulsive	11.25	1,174	.001**	0.589	1,174	ns
Depression	7.88	1,174	.006**	10.830	1,174	.001**
Anger/ Hostility	14.16	1,174	.001**	0.247	1,174	ns
Paranoid Ideation	7.27	1,174	.008**	0.540	1,174	ns
Phobic Anxiety	10.02	1,174	.002**	2.070	1,174	ns

Table 8

Multivariate Analyses of Variance by Groups with Substance Abuse for Impulsivity Factors

Impulsivity Factors	Substance Abuse (SA)		
	F	DF	P<
Age at First Sexual Experience	3.41	1,132	.07*
Suicide Attempts	4.71	1,132	.03*
Self-Injurious Behaviours	1.40	1,132	ns

Table 9

Discriminant Function Analyses: Bulimia Nervosa Subjects
with Depression

Factor	Depression		
Predictor	F	DF	P<
<u>Bulimic Symptom Checklist</u>			
Vomit/ Per Week	4.430	1,152	.0400*
Severity of Vomiting	5.350	1,152	.0060**
Severity of Purging	4.220	1,152	.0070**
Lax/Diuretics/Per Week	3.730	1,152	.0060**
Global Severity	3.360	1,152	.0060**
Binge/Per Week	3.020	1,152	.0080**
Severity of Binge	0.196	1,152	ns
Preoccupation with Food	0.325	1,152	ns
Lack of Control	0.311	1,152	ns
<u>Eating Disorder Inventory</u>			
Ineffectiveness	12.010	1,176	.0003**
Bulimia	7.560	1,176	.0007**
Drive for Thinness	6.630	1,176	.0004**
Interpersonal Distrust	5.400	1,176	.0007**
Interoceptive Awareness	0.233	1,176	ns
Body Dissatisfaction	0.282	1,176	ns
Maturity Fears	0.383	1,176	ns
Perfectionism	0.208	1,176	ns
<u>Hopkins Symptom Checklist</u> (without Depression in Analysis)			
Interpersonal Sensitivity	2.240	1,176	ns
Somatization	1.760	1,176	ns
Psychoticism	0.222	1,176	ns
Phobic Anxiety	0.729	1,176	ns
Obsessive-Compulsive	0.419	1,176	ns
Paranoid Ideation	0.234	1,176	ns
Anxiety	0.419	1,176	ns
Anger/Hostility	0.174	1,176	ns

Table 10

Discriminant Function Analyses:
Bulimia Nervosa Subjects with Substance Abuse

Factor	Substance Abuse		
Predictor	F	DF	P<
<u>Hopkins Symptom Checklist (SCL-90-R)</u>			
Anxiety	13.700	1,176	.0003**
Anger/Hostility	8.100	1,176	.0004**
Interpersonal Sensitivity	0.456	1,176	ns
Psychoticism	0.253	1,176	ns
Somatization	0.122	1,176	ns
Paranoid Ideation	0.306	1,176	ns
Phobic Anxiety	0.457	1,176	ns
Obsessive-Compulsive	0.219	1,176	ns
<u>Impulsivity Items</u>			
Ever Suicidal	4.870	1,134	.0300*
Age of First Sexual Experience	3.480	1,134	.0700*
Self-Injurious Behaviour	0.528	1,134	ns

**FIGURE 1: MEAN AGE OF BULIMIA NERVOSA
GROUPS WITH AND WITHOUT
SUBSTANCE ABUSE DISORDER**

SUBSTANCE ABUSE VS NO SUBSTANCE ABUSE:
 $p < .02$

**FIGURE 2: MEAN NUMBER OF YEARS BINGEING
IN BULIMIA NERVOSA GROUPS WITH
AND WITHOUT SUBSTANCE ABUSE
DISORDER**

SUBSTANCE ABUSE VS NO SUBSTANCE ABUSE:
 $p < .01$

**FIGURE 3: MEAN NUMBER OF YEARS VOMITING
BY BULIMIA NERVOSA GROUPS WITH
AND WITHOUT SUBSTANCE ABUSE
DISORDER**

SUBSTANCE ABUSE VS NO SUBSTANCE ABUSE:
 $p < .01$

**FIGURE 4: MEAN BECK TOTAL SCORES BY
BULIMIA NERVOSA GROUPS WITH
AND WITHOUT SUBSTANCE ABUSE
DISORDER**

SUBSTANCE ABUSE VS NO SUBSTANCE ABUSE:
 $p < .004$

**FIGURE 5: MEAN BECK TOTAL SCORES BY
BULIMIA NERVOSA GROUPS WITH
AND WITHOUT DEPRESSIVE
DISORDERS**

DEPRESSION VS NO DEPRESSION:
 $p < .002$

**FIGURE 6: BULIMIC SYMPTOM CHECKLIST:
MEAN FREQUENCY OF VOMITING
EPISODES PER WEEK BY BN GROUPS
WITH AND WITHOUT DEPRESSION**

DEPRESSION VS NO DEPRESSION:
 $p < .04$

**FIGURE 7: EATING DISORDER INVENTORY:
MEAN INEFFECTIVENESS SUBSCALE
SCORES FOR BN GROUPS WITH
AND WITHOUT DEPRESSIVE DISORDER**

83

**FIGURE 8: SCL-90-R: MEAN DEPRESSION
SUBSCALE SCORES BY BN GROUPS
WITH AND WITHOUT DEPRESSIVE
DISORDER**

84

DEPRESSION VS NO DEPRESSION:
 $p < .001$

**FIGURE 9: SCL-90-R: MEAN DEPRESSION
SUBSCALE SCORES FOR BN GROUPS
WITH AND WITHOUT SUBSTANCE
ABUSE DISORDER**

2 of /de 2

PM-1 3½"x4" PHOTOGRAPHIC MICROCOPY TARGET
NBS 1010a ANSI/ISO #2 EQUIVALENT

PRECISIONSM RESOLUTION TARGETS

**FIGURE 10: SCL-90-R: MEAN SUBSCALE SCORES
FOR BN GROUPS WITH AND
WITHOUT SUBSTANCE ABUSE**

SUBSTANCE ABUSE VS NO SUBSTANCE ABUSE:
 $p < .07$

**FIGURE 12: MEAN SUICIDE ATTEMPTS SCORES
FOR BN GROUPS WITH AND WITHOUT
SUBSTANCE ABUSE DISORDER**

88

SUBSTANCE ABUSE VS NO SUBSTANCE ABUSE:
 $p < .03$

**Diagnostic Criteria for Bulimia Nervosa
According to DSM-III-R Criteria**

- A. Recurrent episodes of binge eating (rapid consumption of a large amount of food in a discrete period of time).
- B. A feeling of lack of control over eating behaviour during the eating binges.
- C. The person regularly engages in either self-induced vomiting, the use of laxatives or diuretics, strict dieting or fasting, or vigorous exercise in order to prevent weight gain.
- D. A minimum average of two binge eating episodes a week for at least three months.
- E. Persistent overconcern with body shape and weight.

**Diagnostic Criteria for Psychoactive Substance Abuse
According to DSM-III-R Criteria**

A. A maladaptive pattern of psychoactive substance use indicated by at least one of the following:

(1) continued use despite knowledge of having a persistent or recurrent social, occupational, psychological, or physical problem that is caused or exacerbated by use of the psychoactive substance;

(2) recurrent use in situations in which use is physically hazardous (e.g. driving while intoxicated).

B. Some symptoms of the disturbance have persisted for at least one month, or have occurred repeatedly over a longer period of time.

C. Never met criteria for Psychoactive Substance Dependence for this substance.

INSTRUCTIONS

This is a scale which measures a variety of attitudes, feelings and behaviors. Some of the items relate to food and eating. Others ask you about your feelings about yourself. THERE ARE NO RIGHT OR WRONG ANSWERS SO TRY VERY HARD TO BE COMPLETELY HONEST IN YOUR ANSWERS. RESULTS ARE COMPLETELY CONFIDENTIAL. Read each question and fill in the circle under the column which applies best to you. Please answer each question very carefully. Thank you.

	ALWAYS	USUALLY	OFTEN	SOMETIMES	RARELY	NEVER
1. I eat sweets and carbohydrates without feeling nervous.	☐	☐	☐	☐	☐	☐
2. I think that my stomach is too big.	☐	☐	☐	☐	☐	☐
3. I wish that I could return to the security of childhood.	☐	☐	☐	☐	☐	☐
4. I eat when I am upset.	☐	☐	☐	☐	☐	☐
5. I stuff myself with food.	☐	☐	☐	☐	☐	☐
6. I wish that I could be younger.	☐	☐	☐	☐	☐	☐
7. I think about dieting.	☐	☐	☐	☐	☐	☐
8. I get frightened when my feelings are too strong.	☐	☐	☐	☐	☐	☐
9. I think that my thighs are too large.	☐	☐	☐	☐	☐	☐
10. I feel ineffective as a person.	☐	☐	☐	☐	☐	☐
11. I feel extremely guilty after overeating.	☐	☐	☐	☐	☐	☐
12. I think that my stomach is just the right size.	☐	☐	☐	☐	☐	☐
13. Only outstanding performance is good enough in my family.	☐	☐	☐	☐	☐	☐
14. The happiest time in life is when you are a child.	☐	☐	☐	☐	☐	☐
15. I am open about my feelings.	☐	☐	☐	☐	☐	☐
16. I am terrified of gaining weight.	☐	☐	☐	☐	☐	☐
17. I trust others.	☐	☐	☐	☐	☐	☐
18. I feel alone in the world.	☐	☐	☐	☐	☐	☐
19. I feel satisfied with the shape of my body.	☐	☐	☐	☐	☐	☐
20. I feel generally in control of things in my life.	☐	☐	☐	☐	☐	☐
21. I get confused about what emotion I am feeling.	☐	☐	☐	☐	☐	☐
22. I would rather be an adult than a child.	☐	☐	☐	☐	☐	☐
23. I can communicate with others easily.	☐	☐	☐	☐	☐	☐
24. I wish I were someone else.	☐	☐	☐	☐	☐	☐
25. I exaggerate or magnify the importance of weight.	☐	☐	☐	☐	☐	☐
26. I can clearly identify what emotion I am feeling.	☐	☐	☐	☐	☐	☐
27. I feel inadequate.	☐	☐	☐	☐	☐	☐
28. I have gone on eating binges where I have felt that I could not stop.	☐	☐	☐	☐	☐	☐
29. As a child, I tried very hard to avoid disappointing my parents and teachers.	☐	☐	☐	☐	☐	☐
30. I have close relationships.	☐	☐	☐	☐	☐	☐

**Diagnostic Criteria for Major Depressive Episode
According to DSM-III-R Criteria**

A. At least five of the following symptoms have been present during the same two-week period and represent a change from previous functioning; at least one of the symptoms is either (1) depressed mood, or (2) loss of interest or pleasure:

(1) depressed mood most of the day, nearly every day, as indicated either by subjective account or observation by others;

(2) markedly diminished interest or pleasure in all, or almost all, activities most of the day, nearly every day;

(3) significant weight loss or weight gain when not dieting (e.g. more than 5% of body weight in a month), or decrease or increase in appetite nearly everyday;

(4) insomnia or hypersomnia nearly every day;

(5) psychomotor agitation or retardation nearly every day;

(6) fatigue or loss of energy nearly everyday;

(7) feelings of worthlessness or excessive or inappropriate guilt nearly every day;

(8) diminished ability to think or concentrate, or indecisiveness, nearly every day;

(9) recurrent thoughts of death, recurrent suicidal ideation without a specific plan, or a suicide attempt or a specific plan for committing suicide.

B. (1) It cannot be established that an organic factor initiated and maintained the disturbance

(2) The disturbance is not a normal reaction to the death of a loved one.

C. At no time during the disturbance have there been delusions or hallucinations for as long as two weeks in the absence of prominent mood symptoms.

D. Not superimposed on Schizophrenia, Schizophreniform Disorder, Delusional Disorder, or Psychotic Disorder NOS.

**Diagnostic Criteria for Major Depression
According to DSM-III-R Criteria**

A. A single Major Depressive Episode

B. Has never had a Manic Episode or an unequivocal Hypomanic Episode.

Major Depression, Recurrent

A. Two or more Major Depressive Episodes, each separated by at least two months of return to more or less usual functioning.

B. Has never had a Manic Episode.

**Diagnostic Criteria for Dysthymia
According to DSM-III-R Criteria**

A. Depressed mood for most of the day, more days than not, as indicated either by subjective account or observation by others, for at least two years.

B. Presence, while depressed, of at least two of the following:

- (1) poor appetite, or overeating;
- (2) insomnia or hypersomnia;
- (3) low energy or fatigue;
- (4) low self-esteem;
- (5) poor concentration or difficulty making decisions;
- (6) feelings of hopelessness;

C. During a two year period of the disturbance, never without the symptoms in A for more than two months at a time.

D. No evidence of an unequivocal Major Depressive Episode during the first two years of the disturbance.

E. Has never had a Manic Episode or an unequivocal Hypomanic Episode.

F. Not superimposed on a chronic psychotic disorder, such as Schizophrenia or Delusional Disorder.

G. It cannot be established that an organic factor initiated and maintained the disturbance, e.g., prolonged administration of an antihypertensive medication.

EDI

David M. Garner, Ph. D.
Marion P. Olmsted, M.A.
Janet Polivy, Ph. D.

Name _____ Date _____

Age _____ Sex _____ Marital status _____

Present weight _____ Height _____

Highest past weight (excluding pregnancy) _____ (lbs)

How long ago? _____ (months)

How long did you weigh this weight? _____ (months)

Lowest past adult weight _____ (lbs)

How long ago? _____ (months)

How long did you weigh this weight? _____ (months)

What do you consider your ideal weight? _____ (lbs)

Age at which weight problems began (if any) _____

Present occupation _____

Father's occupation _____ Mother's occupation _____

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INSTRUCTIONS

This is a scale which measures a variety of attitudes, feelings and behaviors. Some of the items relate to food and eating. Others ask you about your feelings about yourself. THERE ARE NO RIGHT OR WRONG ANSWERS SO TRY VERY HARD TO BE COMPLETELY HONEST IN YOUR ANSWERS. RESULTS ARE COMPLETELY CONFIDENTIAL. Read each question and fill in the circle under the column which applies best to you. Please answer each question very carefully. Thank you.

	ALWAYS	USUALLY	OFTEN	SOMETIMES	RARELY	NEVER
1. I eat sweets and carbohydrates without feeling nervous.	☐	☐	☐	☐	☐	☐
2. I think that my stomach is too big.	☐	☐	☐	☐	☐	☐
3. I wish that I could return to the security of childhood.	☐	☐	☐	☐	☐	☐
4. I eat when I am upset.	☐	☐	☐	☐	☐	☐
5. I stuff myself with food.	☐	☐	☐	☐	☐	☐
6. I wish that I could be younger.	☐	☐	☐	☐	☐	☐
7. I think about dieting.	☐	☐	☐	☐	☐	☐
8. I get frightened when my feelings are too strong.	☐	☐	☐	☐	☐	☐
9. I think that my thighs are too large.	☐	☐	☐	☐	☐	☐
10. I feel ineffective as a person.	☐	☐	☐	☐	☐	☐
11. I feel extremely guilty after overeating.	☐	☐	☐	☐	☐	☐
12. I think that my stomach is just the right size.	☐	☐	☐	☐	☐	☐
13. Only outstanding performance is good enough in my family.	☐	☐	☐	☐	☐	☐
14. The happiest time in life is when you are a child.	☐	☐	☐	☐	☐	☐
15. I am open about my feelings.	☐	☐	☐	☐	☐	☐
16. I am terrified of gaining weight.	☐	☐	☐	☐	☐	☐
17. I trust others.	☐	☐	☐	☐	☐	☐
18. I feel alone in the world.	☐	☐	☐	☐	☐	☐
19. I feel satisfied with the shape of my body.	☐	☐	☐	☐	☐	☐
20. I feel generally in control of things in my life.	☐	☐	☐	☐	☐	☐
21. I get confused about what emotion I am feeling.	☐	☐	☐	☐	☐	☐
22. I would rather be an adult than a child.	☐	☐	☐	☐	☐	☐
23. I can communicate with others easily.	☐	☐	☐	☐	☐	☐
24. I wish I were someone else.	☐	☐	☐	☐	☐	☐
25. I exaggerate or magnify the importance of weight.	☐	☐	☐	☐	☐	☐
26. I can clearly identify what emotion I am feeling.	☐	☐	☐	☐	☐	☐
27. I feel inadequate.	☐	☐	☐	☐	☐	☐
28. I have gone on eating binges where I have felt that I could not stop.	☐	☐	☐	☐	☐	☐
29. As a child, I tried very hard to avoid disappointing my parents and teachers.	☐	☐	☐	☐	☐	☐
30. I have close relationships.	☐	☐	☐	☐	☐	☐

	ALWAYS	USUALLY	OFTEN	SOMETIMES	RARELY	NEVER
31. I like the shape of my buttocks.	☐	☐	☐	☐	☐	☐
32. I am preoccupied with the desire to be thinner.	☐	☐	☐	☐	☐	☐
33. I don't know what's going on inside me.	☐	☐	☐	☐	☐	☐
34. I have trouble expressing my emotions to others.	☐	☐	☐	☐	☐	☐
35. The demands of adulthood are too great.	☐	☐	☐	☐	☐	☐
36. I hate being less than best at things.	☐	☐	☐	☐	☐	☐
37. I feel secure about myself.	☐	☐	☐	☐	☐	☐
38. I think about bingeing (over-eating).	☐	☐	☐	☐	☐	☐
39. I feel happy that I am not a child anymore.	☐	☐	☐	☐	☐	☐
40. I get confused as to whether or not I am hungry.	☐	☐	☐	☐	☐	☐
41. I have a low opinion of myself.	☐	☐	☐	☐	☐	☐
42. I feel that I can achieve my standards.	☐	☐	☐	☐	☐	☐
43. My parents have expected excellence of me.	☐	☐	☐	☐	☐	☐
44. I worry that my feelings will get out of control.	☐	☐	☐	☐	☐	☐
45. I think that my hips are too big.	☐	☐	☐	☐	☐	☐
46. I eat moderately in front of others and stuff myself when they're gone	☐	☐	☐	☐	☐	☐
47. I feel bloated after eating a normal meal.	☐	☐	☐	☐	☐	☐
48. I feel that people are happiest when they are children.	☐	☐	☐	☐	☐	☐
49. If I gain a pound, I worry that I will keep gaining.	☐	☐	☐	☐	☐	☐
50. I feel that I am a worthwhile person.	☐	☐	☐	☐	☐	☐
51. When I am upset, I don't know if I am sad, frightened, or angry. .	☐	☐	☐	☐	☐	☐
52. I feel that I must do things perfectly, or not do them at all.	☐	☐	☐	☐	☐	☐
53. I have the thought of trying to vomit in order to lose weight.	☐	☐	☐	☐	☐	☐
54. I need to keep people at a certain distance (feel uncomfortable if someone tries to get too close).	☐	☐	☐	☐	☐	☐
55. I think that my thighs are just the right size.	☐	☐	☐	☐	☐	☐
56. I feel empty inside (emotionally).	☐	☐	☐	☐	☐	☐
57. I can talk about personal thoughts or feelings.	☐	☐	☐	☐	☐	☐
58. The best years of your life are when you become an adult.	☐	☐	☐	☐	☐	☐
59. I think that my buttocks are too large.	☐	☐	☐	☐	☐	☐
60. I have feelings that I can't quite identify.	☐	☐	☐	☐	☐	☐
61. I eat or drink in secrecy.	☐	☐	☐	☐	☐	☐
62. I think that my hips are just the right size.	☐	☐	☐	☐	☐	☐
63. I have extremely high goals.	☐	☐	☐	☐	☐	☐
64. When I am upset, I worry that I will start eating.	☐	☐	☐	☐	☐	☐

FOR OFFICE USE ONLY

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INSTRUCTIONS:

Below there are groups of statements. Please read each group of statements carefully. Then pick the statement in each group that best describes the way you have been feeling in the past week, including today.

If several statements apply equally well, select each one. Be sure to read all the statements in each group before making your choice.

BECK INVENTORY**NAME:****DATE:**

1. () 0 I do not feel sad.
1 I feel sad.
2 I am sad all the time and I can't snap out of it.
3 I am so sad or unhappy that I can't stand it.
2. () 0 I am not particularly discouraged about the future.
1 I feel discouraged about the future.
2 I feel I have nothing to look forward to.
3 I feel that the future is hopeless and that things cannot improve.
3. () 0 I do not feel like a failure.
1 I feel I have failed more than the average person.
2 As I look back on my life, all I can see is a lot of failures.
3 I feel I am a complete failure as a person.
4. () 0 I get as much satisfaction out of things as I used to.
1 I don't enjoy things the way I used to.
2 I don't get real satisfaction out of anything anymore.
3 I am dissatisfied or bored with everything.
5. () 0 I don't feel particularly guilty.
1 I feel guilty a good part of the time.
2 I feel quite guilty most of the time.
3 I feel guilty all of the time.
6. () 0 I don't feel I am being punished.
1 I feel I may be punished.
2 I expect to be punished.
3 I feel I am being punished.
7. () 0 I don't feel disappointed in myself.
1 I am disappointed in myself.
2 I am disgusted with myself.
3 I hate myself.
8. () 0 I don't feel I am any worse than anybody else.
1 I am critical of myself for my weaknesses or mistakes.
2 I blame myself all the time for my faults.
3 I blame myself for everything bad that happens.
9. () 0 I don't have any thoughts of killing myself.
1 I have thoughts of killing myself, but I would not carry them out.
2 I would like to kill myself.
3 I would kill myself if I had the chance.
10. () 0 I don't cry anymore than usual.
1 I cry more now than I used to.
2 I cry all the time now.
3 I used to be able to cry, but now I can't even though I want to.

NAME:

DATE:

11. () 0 I am no more irritated now than I ever am.
1 I get annoyed or irritated more easily than I used to.
2 I feel irritated all the time now.
3 I don't get irritated at all by the things that used to irritate me
12. () 0 I have not lost interest in other people.
1 I am less interested in other people than I used to be.
2 I have lost most of my interest in other people.
3 I have lost all of my interest in other people.
13. () 0 I make decisions about as well as I ever could.
1 I put off making decisions more than I used to.
2 I have greater difficulty in making decisions than before.
3 I can't make decisions at all anymore.
14. () 0 I don't feel I look any worse than I used to.
1 I am worried that I am looking old or unattractive.
2 I feel that there are permanent changes in my appearance that make me look unattractive.
3 I believe that I look ugly.
15. () 0 I can work about as well as before.
1 It takes an extra effort to get started at doing something.
2 I have to push myself very hard to do anything.
3 I can't do any work at all.
16. () 0 I can sleep as well as usual.
1 I don't sleep as well as I used to.
2 I wake up 1-2 hours earlier than usual and find it hard to get back to sleep.
3 I wake up several hours earlier than I used to and cannot get back to sleep.
17. () 0 I don't get more tired than usual.
1 I get tired more easily than I used to.
2 I get tired from doing almost anything.
3 I am too tired to do anything.
18. () 0 My appetite is no worse than usual.
1 My appetite is not as good as it used to be.
2 My appetite is much worse now.
3 I have no appetite at all anymore.
19. () 0 I haven't lost much weight, if any, lately.
1 I have lost more than 5 pounds.
2 I have lost more than 10 pounds.
3 I have lost more than 15 pounds.
- I am purposely trying to lose weight by eating less. Yes _____ No _____
20. () 0 I am no more worried about my health than usual.
1 I am worried about physical problems such as aches and pains; or upset stomach; or constipation.
2 I am very worried about physical problems and it's hard to think of much else.
3 I am so worried about my physical problems, that I cannot think about anything else.
21. () 0 I have not noticed any recent change in my interest in sex.
1 I am less interested in sex than I used to be.
2 I am much less interested in sex now.
3 I have lost interest in sex completely.

SCL-90-R[®]

Symptom Checklist-90-R

Leonard R. Derogatis, PhD

DIRECTIONS

1. Print your name, identification number, age, gender, and testing date in the area on the left side of this page
2. Use a lead pencil only and make a dark mark when responding to the items on pages 2 and 3
3. If you want to change an answer, erase it carefully and then fill in your new choice
4. Do not make any marks outside the circles

Last Name First MI

ID Number

Age Gender Test Date

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**DO NOT SEND TO NATIONAL COMPUTER SYSTEMS
USE ONLY FOR HAND SCORING**

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INSTRUCTIONS:

Below is a list of problems people sometimes have. Please read each one carefully and blacken the circle that best describes HOW MUCH THAT PROBLEM HAS DISTRESSED OR BOTHERED YOU DURING THE PAST 7 DAYS INCLUDING TODAY. Blacken the circle for only one

number for each problem and do not skip any items. If you change your mind, erase your first mark carefully. Read the example before beginning, and if you have any questions please ask about them.

					EXAMPLE
					HOW MUCH WERE YOU DISTRESSED BY:
NOT AT ALL	A LITTLE BIT	MODERATELY	QUITE A BIT	EXTREMELY	
0	1	2	3	4	Bodyaches

					HOW MUCH WERE YOU DISTRESSED BY:	
NOT AT ALL	A LITTLE BIT	MODERATELY	QUITE A BIT	EXTREMELY		
1	0	1	2	3	4	Headaches
2	0	1	2	3	4	Nervousness or shakiness inside
3	0	1	2	3	4	Repeated unpleasant thoughts that won't leave your mind
4	0	1	2	3	4	Faintness or dizziness
5	0	1	2	3	4	Loss of sexual interest or pleasure
6	0	1	2	3	4	Feeling critical of others
7	0	1	2	3	4	The idea that someone else can control your thoughts
8	0	1	2	3	4	Feeling others are to blame for most of your troubles
9	0	1	2	3	4	Trouble remembering things
10	0	1	2	3	4	Worried about sloppiness or carelessness
11	0	1	2	3	4	Feeling easily annoyed or irritated
12	0	1	2	3	4	Pains in heart or chest
13	0	1	2	3	4	Feeling afraid in open spaces or on the streets
14	0	1	2	3	4	Feeling low in energy or slowed down
15	0	1	2	3	4	Thoughts of ending your life
16	0	1	2	3	4	Hearing voices that other people do not hear
17	0	1	2	3	4	Trembling
18	0	1	2	3	4	Feeling that most people cannot be trusted
19	0	1	2	3	4	Poor appetite
20	0	1	2	3	4	Crying easily
21	0	1	2	3	4	Feeling shy or uneasy with the opposite sex
22	0	1	2	3	4	Feelings of being trapped or caught
23	0	1	2	3	4	Suddenly scared for no reason
24	0	1	2	3	4	Temper outbursts that you could not control
25	0	1	2	3	4	Feeling afraid to go out of your house alone
26	0	1	2	3	4	Blaming yourself for things
27	0	1	2	3	4	Pains in lower back
28	0	1	2	3	4	Feeling blocked in getting things done
29	0	1	2	3	4	Feeling lonely
30	0	1	2	3	4	Feeling blue
31	0	1	2	3	4	Worrying too much about things
32	0	1	2	3	4	Feeling no interest in things
33	0	1	2	3	4	Feeling fearful
34	0	1	2	3	4	Your feelings being easily hurt
35	0	1	2	3	4	Other people being aware of your private thoughts
36	0	1	2	3	4	Feeling others do not understand you or are unsympathetic
37	0	1	2	3	4	Feeling that people are unfriendly or dislike you

HOW MUCH WERE YOU DISTRESSED BY:

		NOT AT ALL	A LITTLE BIT	MODERATELY	QUITE A BIT	EXTREMELY	
38	0	1	2	3	4	5	Having to do things very slowly to insure correctness
39	0	1	2	3	4	5	Heart pounding or racing
40	0	1	2	3	4	5	Nausea or upset stomach
41	0	1	2	3	4	5	Feeling inferior to others
42	0	1	2	3	4	5	Soreness of your muscles
43	0	1	2	3	4	5	Feeling that you are watched or talked about by others
44	0	1	2	3	4	5	Trouble falling asleep
45	0	1	2	3	4	5	Having to check and double-check what you do
46	0	1	2	3	4	5	Difficulty making decisions
47	0	1	2	3	4	5	Feeling afraid to travel on buses, subways, or trains
48	0	1	2	3	4	5	Trouble getting your breath
49	0	1	2	3	4	5	Hot or cold spells
50	0	1	2	3	4	5	Having to avoid certain things, places, or activities because they frighten you
51	0	1	2	3	4	5	Your mind going blank
52	0	1	2	3	4	5	Numbness or tingling in parts of your body
53	0	1	2	3	4	5	A lump in your throat
54	0	1	2	3	4	5	Feeling hopeless about the future
55	0	1	2	3	4	5	Trouble concentrating
56	0	1	2	3	4	5	Feeling weak in parts of your body
57	0	1	2	3	4	5	Feeling tense or keyed up
58	0	1	2	3	4	5	Heavy feelings in your arms or legs
59	0	1	2	3	4	5	Thoughts of death or dying
60	0	1	2	3	4	5	Overeating
61	0	1	2	3	4	5	Feeling uneasy when people are watching or talking about you
62	0	1	2	3	4	5	Having thoughts that are not your own
63	0	1	2	3	4	5	Having urges to beat, injure, or harm someone
64	0	1	2	3	4	5	Awakening in the early morning
65	0	1	2	3	4	5	Having to repeat the same actions such as touching, counting, or washing
66	0	1	2	3	4	5	Sleep that is restless or disturbed
67	0	1	2	3	4	5	Having urges to break or smash things
68	0	1	2	3	4	5	Having ideas or beliefs that others do not share
69	0	1	2	3	4	5	Feeling very self-conscious with others
70	0	1	2	3	4	5	Feeling uneasy in crowds, such as shopping or at a movie
71	0	1	2	3	4	5	Feeling everything is an effort
72	0	1	2	3	4	5	Spells of terror or panic
73	0	1	2	3	4	5	Feeling uncomfortable about eating or drinking in public
74	0	1	2	3	4	5	Getting into frequent arguments
75	0	1	2	3	4	5	Feeling nervous when you are left alone
76	0	1	2	3	4	5	Others not giving you proper credit for your achievements
77	0	1	2	3	4	5	Feeling lonely even when you are with people
78	0	1	2	3	4	5	Feeling so restless you couldn't sit still
79	0	1	2	3	4	5	Feelings of worthlessness
80	0	1	2	3	4	5	The feeling that something bad is going to happen to you
81	0	1	2	3	4	5	Shouting or throwing things
82	0	1	2	3	4	5	Feeling afraid you will faint in public
83	0	1	2	3	4	5	Feeling that people will take advantage of you if you let them
84	0	1	2	3	4	5	Having thoughts about sex that bother you a lot
85	0	1	2	3	4	5	The idea that you should be punished for your sins
86	0	1	2	3	4	5	Thoughts and images of a frightening nature
87	0	1	2	3	4	5	The idea that something serious is wrong with your body
88	0	1	2	3	4	5	Never feeling close to another person
89	0	1	2	3	4	5	Feelings of guilt
90	0	1	2	3	4	5	The idea that something is wrong with your mind

WEEKLY SYMPTOM CHECKLIST

ID # _____ Date _____

1. Please indicate the number of episodes or times in the past week you experienced the following symptoms:

<u>Symptom</u>	<u>Number of episodes last week</u>
a) Binging	_____
b) Vomiting	_____
c) Purging (laxative and/or diuretic use)	_____

2. Please rate the severity of the following symptoms using the corresponding rating scale. The rating of severity should correspond to the degree to which these symptoms have been a problem for you (regardless of frequency) in the past week. Circle your choice for each item.

<u>SYMPTOM</u>	<u>LEVEL OF SEVERITY</u>
1. Binge eating	a) Not at all b) A little c) Moderately d) Quite a bit e) Extremely
2. Vomiting	a) Not at all b) A little c) Moderately d) Quite a bit e) Extremely
3. Other purging (i.e., laxative and/or diuretic use, etc.)	a) Not at all b) A little c) Moderately d) Quite a bit e) Extremely
4. Pre-occupation with food	a) Not at all b) A little c) Moderately d) Quite a bit e) Extremely
5. Lack of control over eating	a) Not at all b) A little c) Moderately d) Quite a bit e) Extremely
6. Overall severity of these symptoms	a) Not at all b) A little c) Moderately d) Quite a bit e) Extremely

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