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THE ROLE OF PERSONALITY DYSFUNCTION IN PERCEPTIONS
OF FAMILY ENVIRONMENT IN BULIMIA NERVOSA

by

JUDY S. NILES, B.A., B.SC., M.A.

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

(Doctor of Philosophy)

Department of PSYCHOLOGY

Carleton University

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OF FAMILY ENVIRONMENT IN BULIMIA NERVOSA"

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Abstract

Clinical theory and research links disturbed family relationships to the origin and maintenance of bulimia nervosa. Because, the family environment has been examined in terms of the self-reported perceptions of symptomatic bulimics who may be depressed and/or have comorbid personality disorders, it is unclear whether the relationship between the negative reports and bulimia reflects a negativity bias on the part of the bulimic, or a causal relationship in that the negative family environment precipitates the onset of bulimia, or alternatively whether this environment reflects a response by the family system to having a bulimic family member.

Remitted bulimics (n=19) and partially remitted bulimics (n=19) who received treatment for their eating disorder were asked to provide information about their personality and family environment. A relative of the bulimics in each group (n=19 remitted bulimics' relatives; n=19 partially remitted bulimics' relatives) were asked to confirm this information. Bulimics' personality and family environment were examined by administering the Computer Personality Disorder Interview (CPDI) and the Family Environment Scale (FES).

Bulimics' perceptions were not significantly different from those of their relatives. They both perceived mildly negative family environments. This suggests that it is

possible that the family environment is implicated in the etiology of bulimia nervosa, although based on past research more extremely negative descriptions would have been expected. Remitted and partially remitted bulimics' perceptions of their family environment were not significantly different from the norm.

Depression and the presence of a personality disorder were related to bulimics' reports of a negative family environment, in terms of perceptions of family relationships, also suggesting a possible negativity bias. The outcome of this study suggests that a complex combination of factors are involved in bulimics' perceptions of their family environment particularly when bulimics receive treatment. The implications for eating disorder prevention and family counselling are discussed.

Within the context of this study the validity of three personality instruments in terms of diagnostic agreement was examined. The Computer Personality Disorder Interview (i.e., CPDI; a computerized clinical interview), the Structured Clinical Interview for DSM-III-R Personality Disorders (i.e., SCID-II; a semi-structured clinical interview) and the Personality Disorder Questionnaire (i.e., PDQ-R; a paper-and-pencil questionnaire) were administered to bulimic women in order to assess their personality; the CPDI was administered to assess the relatives' perceptions of their personality. Comparisons were made between each of the formats in terms of diagnostic agreement and prevalence.

On average, diagnostic correspondence between the pairs of instruments was poor. For individual diagnoses, diagnostic correspondence was slightly better between the CPDI and the SCID-II than between either the CPDI or the SCID-II with the PDQ-R.

Agreement between the instruments for schizoid, histrionic and narcissistic personality disorders which require behavioural observation was extremely poor. When diagnostic agreement on the CPDI was examined between bulimics and the perceptions of their relatives fair to good agreement was obtained for disorders that require behaviour observation.

In terms of diagnostic prevalence, the CPDI and the SCID-II were comparable while the PDQ-R yielded a higher diagnostic prevalence, and the highest diagnosis of multiple disorders. The validity of using computers as diagnosticians in clinical practice is discussed.

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I thank God for giving me faith, perseverance and the strength to complete this project.

I wish to dedicate this project to the memory of my grandparents who would have been proud of my accomplishment.

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Introduction

Clinical theory and research links disturbed family relationships to the origin and maintenance of eating disorders. A number of researchers concede that the family environment of bulimics can be viewed as precipitating the onset of bulimia nervosa (Bailey, 1991; Johnson & Pure, 1988; Minuchin, Rosman, & Baker, 1978; Root, Fallon, & Friedrich, 1986). However, researchers also argue that the extremely distressed family environments reported by bulimics may be a reaction by the family system to having a bulimic family member (Kent & Clopton, 1992). The role of family environment as a precipitator or consequence of bulimia nervosa clearly has important implications for treatment.

To examine the relationship of family environment to bulimia, past research has examined bulimics' self-perceptions of their family environment by administering the Family Environment Scale (FES; Moos & Moos, 1986) which assesses perceptions of familial interpersonal relationships (e.g., cohesion, expression of feelings), directions of personal growth (e.g., independence, achievement) and family system maintenance (e.g., organization, control) (Johnson & Flach, 1985; Ordman & Kirschenbaum, 1986). When the FES is administered to bulimic women and normal control women, bulimic women indicate that their family environment is low in cohesion, low in expression of feelings, low in active

recreational orientation, and high in conflict compared to normal controls' perceptions of their family environment (Johnson & Flach, 1995; Ordman & Kirschenbaum, 1986). However, this response style is not unique to bulimic women but has also been reported by depressed bulimics compared to nondepressed bulimics, compulsive overeaters compared to noncompulsive overeaters, and alcoholics compared to nonalcoholics (Bailey, 1991). This would suggest that the effects of family environment may be much less differentiated and in fact, perceptions of a negative family environment may be associated with a host of factors. In particular, an interesting issue that has been minimally addressed in the literature is the cognitive effects of co-occurring personality disorders on bulimics' perceptions of their family environment.

It was the goal of the present research to examine the role of family environment in relation to the treatment of bulimia nervosa. If family environment is a precursor to bulimia nervosa, the successful treatment of bulimia nervosa in isolation to altering family environment will result in the continued maintenance of a negative family dynamic. However, if improvements in family environment are perceived, it is also important to determine whether such perceptual changes are real or are in fact a function of changes in the framework adopted by the bulimic. To the extent that negative perceptions are associated with the

presentation of concurrent personality disorders, it is possible that they are in part a function of the bulimic's world view. However, if actual changes in the family have occurred, this would suggest that the family environment is responsive to the clinical status of the bulimic, and the bulimic's perceptions of change should be corroborated by other members of the family.

Bulimia Nervosa

Bulimia nervosa is an eating disorder that is characterized by powerful and intractable urges to over-eat (Russell, 1979). According to the American Psychiatric Association Diagnostic and Statistical Manual of Mental Disorders, 3rd ed. (DSM-III-R; American Psychiatric Association, 1987), bulimia nervosa involves recurrent episodes of binge eating during which large quantities of high caloric foods are ingested quickly. During a binge individuals are aware that their eating behaviour is abnormal but they are afraid of not being able to stop binging voluntarily. Furthermore, their binge eating behaviour is followed by depression and self-depreciating thoughts. Termination of a binge may occur by either social interruption, sleep, abdominal pain, or by purging. Purging is performed by either self-induced vomiting, fasting, using laxatives, diuretics or by excessively exercising. These methods are repetitious and are used to avoid the weight gain that is precipitated by the high caloric food intake

(Wertheim & Weiss, 1989).

The frequency and duration of bingeing and purging behaviour varies among bulimic women (Bilich, 1989; Pyle, Mitchell, & Eckert, 1981; Schlesier-Stropp, 1984). The variability of this behaviour indicates that bulimics are heterogeneous in their patterns of bulimic symptomatology (Bilich, 1989). Although bulimia nervosa is a chronic disorder, bulimic symptomatology can wax and wane in severity, allowing bulimics to occasionally be in control of their behaviour and periodically relapse back to this behaviour (Fairburn & Cooper, 1982; Pyle et al., 1985). The medical complications of recurrent bingeing and purging episodes can be severe enough to result in problems such as electrolyte imbalances, oesophageal ulceration, gum and tooth decay and swelling of the parotid glands, as well as suicide (Russell, 1979). DSM-III-R criteria for a diagnosis of bulimia nervosa are presented in Table 1.¹

Prevalence Estimates of Bulimia Nervosa

Because bulimia nervosa is a secretive disorder by nature, the exact prevalence rate is unknown. However, bulimia nervosa is more common and more serious among young

¹Current clinical diagnoses are based on the updated DSM-IV. However, at the time of conducting the present research, diagnoses were based on DSM-III-R criteria. Unlike DSM-III-R, DSM-IV defines the length of a binge eating period and the lack of control over eating. In DSM-IV, bulimia nervosa is divided into purging and nonpurging subtypes. Given the unavailability of pretreatment information, it is not clear how subjects in the present research would have been classified using the DSM-IV subtypes.

Table 1**DSM-III-R Diagnostic Criteria for Bulimia Nervosa**

-
- 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 eating binges
 - C. The individual regularly engages in either self-induced vomiting, use of laxatives or diuretics, strict dieting, fasting or vigorous exercise in order to prevent weight gain
 - D. A minimum average of two binge-eating episodes per week for at least three months
 - E. Persistent overconcern with body shape and weight
-

Note. From the Diagnostic and Statistical Manual of Mental Disorders (3rd ed. Revised) (pp. 68-69) by the American Psychiatric Association, 1987, Washington, DC: Author.

women (age range 15-26) than among young men (Boskind-Lodahl & White, 1978; Kagan & Squires, 1985; Kuntz, Groze, & Yates, 1992; Mitchell & Pyle, 1982). According to Mitchell and Pyle (1982) male bulimics represent less than five percent of the total cases reported in the literature. In Canada, an average of two to five percent of women are reported to exhibit bulimic symptomatology (Health and Welfare, 1994).

The age of onset for bulimia nervosa is typically between ages 15 and 18 (Boskind-Lodahl, & White, 1978; Russell, 1979). The majority of patients who present with bulimic symptoms are in their 20's. However, the age range of patients with bulimia symptomatology may range from age 15 to 51 (late onset bulimia) (Bilich, 1989; Mitchell, Hatsukami, Pyle, Eckert, & Soll, 1987; Rosenfield, 1988; Wooley, 1994).

A few studies have attempted to determine the prevalence of bulimia nervosa among university students (Bilich, 1989; Johnson & Connors, 1987). According to these studies, while binge eating behaviour occurs fairly often among these students, only a small percentage of them fit the diagnostic criteria for bulimia nervosa (Nagelberg, Hale, & Ware, 1984). Estimates of the percentage of female university students in the United States, who have bulimia nervosa range from 3.8% to 13% (Strangler & Printz, 1985).

There has been an increase in the occurrence of bulimia nervosa in western society (Garfinkel, Garner, & Goldbloom,

1987; Bilich, 1989). The increase is said to be correlated with sociocultural pressures on women to maintain a slender body which is considered to be the most salient aspect of physical attractiveness (Bilich, 1989; Garfinkel, et al., 1987; Ledoux, Choquet, & Flament, 1991; Miller, Coffman & Linke, 1980). Not only are there sociocultural pressures on women to be thin but there may also be familial pressures (Garfinkel, Garner, Padraig, Brandes, O'Hanlon, & Walsh, 1983). For example, Mitchell, Hatsukami, Pyle and Eckert (1986) reported that 53% (N=255) of female bulimic outpatients who were administered questionnaires which examined their eating history, reported that they initiated bulimic behaviour after pressure from their family to lose weight. Furthermore, 44.8% (N=252) of the female bulimic outpatients indicated that their friends encouraged them to lose weight (Mitchell et al., 1986). According to Post and Crowther (1985), the unrealistic expectations which society, family, and friends place on women to be thin can contribute to the development of unrealistic expectations for attaining a reduced body weight. Evidently, societal and familial pressure as well as peer pressure may facilitate the development of eating disorders in "susceptible" individuals (Post & Crowther, 1985).

A common dissatisfaction among bulimic women of different ages is their weight and shape. Bulimic women typically indicate they are "fat" when they are not

(Mitchell et al., 1986). Although bulimic women have been either underweight or overweight prior to becoming bulimic, they are usually within the normal weight range for their age and height (Bilich, 1989) or are not generally more than either 10 pounds underweight or overweight (Rosenfield, 1988). Not only do bulimic women subjectively report that they have a weight problem but they also report weight problems within their family (Bilich, 1989; Kent & Clopton, 1992). According to Grace, Jacobson and Fullager (1985), since bulimics distort their own body images they may also distort the degree of weight problems within their family. However, Garner et al. (1985) indicate that this may not be a distortion at all, since their research has demonstrated that parental obesity is more than twice as common in families that have a bulimic member compared to normal control families and families that have an anorexic member.

The prevalence of parental obesity in this population suggests that in addition to sociocultural and family pressures there may be a biological basis to bulimia nervosa. Indeed the extent to which biological factors are implicated in the onset, maintenance and treatment of bulimia nervosa have been well documented. However, there is no reason to believe that these biological factors are directly implicated in the familial dynamics that are associated with bulimia nervosa. Thus, while a detailed review of the biological basis is beyond the scope of this

thesis, for the sake of comprehensiveness, a brief overview of the biological factors involved can be found in Appendix A.

The Family Systems Approach to Eating Disorders

Bulimia nervosa is a multidimensional eating disorder that may be precipitated and perpetuated by biology, and by psychological and sociocultural factors including the family (Bailey, 1991; Johnson & Pure, 1988; Minuchin, Rosman, & Baker, 1978; Root, Fallon, & Friedrich, 1986). Family systems theorists emphasize the role of the family in the development of the eating disorders, anorexia nervosa and bulimia nervosa. Over and above pressures directly pertaining to weight, case studies since as early as 1873 have documented the dysfunctional ways in which parents interact with their anorexic daughters (Yager, 1976).

Historically, anorexia nervosa has received more attention than bulimia nervosa, since the symptomatic weight loss is more noticeable among anorexics compared to bulimics. However, because there has been an increase in the number of females diagnosed with bulimia nervosa, researchers have begun to pay greater attention to the dynamics involved. In particular, family system theorists have investigated whether a dysfunctional family contributes to the etiology of bulimia nervosa (Bailey, 1991; Johnson & Pure, 1986; Minuchin et al., 1978; Root et al., 1986). Minuchin et al. (1978) conceptualize bulimia nervosa as

resulting from a teenager's overprotective parents. Humphrey (1986a) provided support for this idea based on detailed analyses of observed interactions and perceived relationships of both parents with their bulimic daughter. Family systems theorists also suggest that the attitudes and behaviour of parents, the relationships between the bulimic woman and her parents, and the familial environment may precipitate and perpetuate bulimia nervosa (Bailey, 1991; Johnson & Pure, 1988; Root, et al., 1986). Support for this suggestion is obtained from numerous studies which have investigated bulimics' perceptions of their family environment and have found them to perceive their family environment negatively compared to normal controls (Bailey, 1991; Blouin, Blouin, & Zuro, 1990; Coburn & Ganong, 1989; Humphrey, 1986a; Johnson & Flach, 1985; Kent & Clopton, 1992; Ordman & Kirschenbaum, 1986; Scalf-McIver & Thompson, 1989; Shisslak, McKeon, & Crago, 1990; Stern et al., 1989).

Eating disorder subjects' perceptions of their family environment are typically examined by administering the Family Environment Scale (FES) because it thoroughly assesses many areas of the family's social environment. The FES is a self-report true/false questionnaire that measures respondents' perceptions of their conjugal or nuclear family environment (Moos & Moos, 1986). It has 10 subscales that highlight 3 dimensions of family functioning (see Table 2) including: (a) relationships within the family, which

Table 2**The Family Environment Scale**

Dimensions	Subscales	Descriptions
Interpersonal Relationships	1. Cohesion	commitment, help and support
	2. Expression	expression of feelings and encouragement
	3. Conflict	expression of anger and aggression
Directions of Personal Growth	4. Independence	decision making
	5. Achievement Orientation	achievement-competition in work and school
	6. Intellectual Cultural Orientation	interest in political, and cultural activities
	7. Active Recreational Orientation	participation in social and recreational activities
	8. Moral Religious Emphasis	emphasis on ethical and religious issues and values

The Family Environment Scale (Continued)

Dimensions	Subscales	Descriptions
System Maintenance	9. Organization	the importance of organization and structure in planning family activities and responsibilities
	10. Control	the extent to which set rules and procedures are used to "run" family life

Note. From The Family Environment Scale Manual by A. Moos and B. Moos, 1980, Palo Alto, CA: Consulting Psychologists Press.

reflects the extent to which family members are mutually supportive and are encouraged to express positive and negative feelings; (b) directions of personal growth, which refers to the extent to which the environment facilitates individual member's ability to be autonomous, and competitively oriented and active in the sociocultural context more generally; and (c) system maintenance, which reflects the degree of organization and structure that control the operation of family life.

Normative data based on 1,125 normal and 500 distressed families are available for each of the FES subscales (Moos, & Moos, 1986). The subsample for normal families includes families such as single-parent and multigenerational families, families of ethnic minority groups, and families of all age groups such as recently married student families, families with preschool and adolescent children, families whose children are living away from home, and families composed of retired adults. The subsample of distressed families consists of families of alcohol abusers, families of psychiatric patients and families in which an adolescent or young child was in a crisis situation, had run away from home, was identified as delinquent, or was being placed into a foster home (Moos, & Moos, 1986). Moos and Moos (1986) indicate that when normal families' and distressed families' perceptions of their own family environment are compared, distressed families are lower on cohesion, expression of

feelings, independence, intellectual orientation, recreational orientation, and higher in conflict and control. According to Moos and Moos (1986), these differences are still apparent when statistical controls have been implemented for group differences on socioeconomic status and family background characteristics such as age and education of parents and number of children.

A number of studies have administered the FES to eating disorder patients in order to determine how they perceive their family environment. Similar to the distressed families in the normative sample, most studies that have administered the FES to bulimic patients generally find that they report their family environment to be low in cohesion, low in expression of feelings, low in active recreational orientation, and high in conflict compared to normal control subjects' perception of their family environment (Bailey, 1991; Blouin, Carter, Blouin, Tener, Schnare-Hayes, Zuro, Barlow, & Perez, 1994; Blouin, Zuro, & Blouin, 1990; Coburn & Ganong, 1989; Humphrey, 1986a; Johnson & Flach 1985; Kent & Clopton, 1992; Ordman & Kirschenbaum, 1986; Scalf-McIver & Thompson, 1989; Shisslak, McKeon, & Crago, 1990; Stern et al., 1989). As summarized in Table 3, this pattern is fairly consistent across a number of studies.

A similar set of findings was reported by Steiger et al. (1991) who examined the bulimics' self-reported perceptions of their family environment using the Family

Table 3
Bulimic Subjects' Perceptions of Their Family Environment in Ten Studies
which Administered the Family Environment Scale

Studies	Interpersonal Relationships				Directions of Personal Growth				Symptom Maintenance		Subjects
	Cohesion	Expressiveness	Conflict	Independence	Achievement Orientation	Intellectual Cultural Orientation	Active Recreational Orientation	Moral Religious Emphasis	Organization	Control	
Enley (1991)	low	low	high	high	—	—	high	—	—	—	Subjects with bulimic-like symptoms
Holm et al (1990)	low	low	—	low	high	—	low	—	—	high	depressed bulimics nondepressed bulimics normal controls
Humphrey (1986)	low	low	—	—	—	—	—	—	—	—	bulimics-e anorexia normal controls
Johnson & Flech (1985)	low	low	high	low	—	low	low	low	—	—	bulimics normal controls
Kost & Clouston (1988)	—	—	—	—	—	—	—	—	—	—	bulimics subclinical bulimics normal controls
Kost & Clouston (1992)	low	low	—	—	—	—	low	—	—	—	bulimics subclinical bulimics symptom-free subjects
Ordman & Kirchbaum (1986)	low	low	high	low	—	—	low	—	—	—	bulimics normal controls
Rybacki et al (1989)	—	low	—	—	—	—	low	low	—	—	bulimics normal controls
Shimada et al (1990)	low	low	high	—	—	—	low	—	—	high	bulimics bulimics-anorexia normal controls
Stern et al (1989)	low	low	high	—	high	—	—	—	—	—	bulimics bulimics-anorexia normal controls

Note. Bulimic subjects reported more distressed family environments than did the other groups.

Assessment Device (FAD). Steiger et al. (1991) investigated the perceptions of 5 groups: (1) anorexic restrictors, (2) anorexic bingers, (3) bulimics with a history of anorexia nervosa, (4) bulimics without a history of anorexia nervosa and (5) normal controls. The results of the FAD indicated that, in general, eating disorder subjects perceived their family more negatively than did normal control subjects on most of the FAD subscales. Eating disorder subjects compared to normal control subjects indicated that their family environment did not encourage mutual understanding between family members, did not encourage empathic responsiveness and was insensitive to family members' affects (Steiger et al., 1991). Eating disorder subjects and normal control subjects did not differ on the affective involvement and the behaviour control subscales of the FAD. There were no significant differences between the eating disorder groups.

Bulimics' negative perceptions of their family environment were once believed to be of etiological significance for bulimia nervosa. These perceptions were believed to reflect accurate impressions of their family environment, and hence were interpreted to indicate that the family environment was a precursor to bulimia nervosa (Lacey, Phil, Coker, & Birtchnell, 1986; Sights & Richards, 1984). While it is no doubt tempting to consider this to be of etiological significance, one cannot exclude the

possibility that bulimics' reported dysfunctional family environment may reflect a negative perceptual bias rather than an accurate depiction of the family context.

Alternatively even if the bulimics' description of their family environment is accurate, it is possible that the dysfunction arises as a reaction to having to cope with a family member who is bulimic rather than being a precipitator to the bulimia nervosa.

Psychological Disorders and Bulimics' Perceptions of their Family Environment

An interesting issue that has been minimally addressed in the literature is the potential biasing effect that psychological disorders may have on bulimics' perceptions of their family environment. Psychological disorders including depression and other personality disorders such as borderline personality disorder have been frequently diagnosed in this population (Steiger, et al., 1991; Wonderlich & Swift, 1990). The presence of such disorders in bulimics has been associated with negative perceptual biases. This negative bias may stem from the mood congruent memories that are typical of depressed individuals (Billings & Moos, 1983).

Depression has been associated with negative perceptions that bulimic women describe of their family environment (Blouin, et al., 1990; Heinmaa, 1992 cited by Blouin et al., 1994; Wonderlich & Swift, 1990). The role of depression in the perceptions of bulimic women has been

examined for example, by Blouin et al. (1990), who reported that depressed bulimic women perceived their family environment to be less cohesive, less independent, less expressive, less involved in recreational activity, and more oriented toward achievement than nondepressed bulimic women and normal control women. Nondepressed bulimic women compared to normal control women did not perceive their family environment differently (Blouin et al., 1990). Similarly Wonderlich and Swift (1990) reported that eating disorder women (e.g., anorexics, bulimic-anorexics, bulimics) who obtained high depression scores on the Millon Clinical Multiaxial Inventory (MCMI; Millon, 1983) rated their parental relationships negatively. Specifically, depressed eating disorder women compared to normal control women perceived their parents to be more hostile. Wonderlich and Swift (1990) further reported that when depression was statistically controlled, there were no significant differences in parental relationship ratings made by anorexics, bulimic-anorexics, bulimics and normal control subjects.

In contrast, Kent and Clopton (1988) found no significant differences between bulimic, subclinical bulimic and normal control students' perceptions of their family environment as reported using the FES. However, unlike the clinical subjects employed in the above studies, the subjects employed by Kent and Clopton (1988) were

nonclinical. Nonclinical subjects are believed to manifest low depressive symptoms compared to clinical subjects (Kent & Clopton, 1992). Thus, although the incidence of depression was not reported by Kent and Clopton (1988), it is likely to have been low. A possible low incidence of depression may account for the failure by these authors to find negative perceptions of family environment in the bulimic compared to the control group.

Thus bulimic women appear to have a negative bias in perceptions of their family environment as a result of their depressed state. This brings into question the accuracy of, particularly depressed, bulimic women's reports of the dynamics within their family environment.

Personality Disorders in Bulimia Nervosa

The negative perceptions of family environment reported by bulimics have also been associated with other personality disorders prevalent among bulimics. In particular, many bulimic women receive diagnoses from Cluster B (histrionic, narcissistic, antisocial, borderline) and Cluster C (avoidant, dependent, obsessive-compulsive, passive aggressive) of DSM-III-R (Kennedy, McVey, & Katz, 1990; Rybicki, Lepkowsky, & Arndt, 1989; Swift, Slotnick, & Goodman, 1990; Wonderlich, et al., 1990; Yagar, Landsverk, Edelstein, & Hyler, 1989). Numerous studies have examined the comorbidity of bulimia nervosa and DSM-III-R personality disorders. Depending on the diagnostic instruments,

comorbidity rates have ranged from 50% using the Diagnostic Interview for Personality Disorders (Zanarini, Frankenburg, Pope, Hudson, Yurgelun-Todd & Cicchetti, 1990) to between 53% and 63% using the Personality Diagnostic Questionnaire (PDQ) (Yates et al., 1989) along with a clinical interview (Gvirtzman, Roy-Byrne, Yager & Gerner, 1983; Levin & Hyler, 1988) to as high as 77% based on the Structured Clinical Interview for DSM-III-R (SCID-II) (Powers, Coover, Brightwell & Stevens, 1988). These studies were based on outpatients.

A common finding among studies investigating the relationship between personality disorders and eating disorders is the diagnosis of borderline personality disorder. Borderline personality disorder is one of the most frequently diagnosed personality disorder among bulimics (Johnson Tobin, & Enright, 1989; Levin & Hyler, 1986; Yager Landsverk, Edelstein & Hyler, 1989), although some studies have not found evidence to support this outcome (Ames-Frankel, Delvin, Walsh, Strasser, Sadik, Oldham, & Roose, 1992; Herzog, Keller, Lavori, Kenny, & Slacks, 1992; Pendleton, Tisdale, & Marler, 1991; Pope, Frankenburg, Hudson, Jonas, & Yurgelun-Todd, 1987; Tisdale, Pendleton, & Marler, 1990). The comorbidity rate of this disorder with bulimia nervosa is in fact variable among studies that have used outpatients as subjects (Gvirtzman et al., 1983 (22%); Levin and Hyler, 1988 (25%); Powers et al. 1988 (44%);

Schmidt & Telch, 1990 (35%); Yates et al., 1989 (13%); Zanarini et al., 1990 (33%). The variability in comorbidity rates in borderline personality has been primarily attributed to the diagnostic criteria and instruments used (Herzog, Keller, Lavori, Kenny, & Slacks, 1992).

To the extent that borderline personality may be associated with bulimia nervosa, it becomes of interest as to whether it would be related to bulimics' negative perceptions of their family environment. To assess whether borderline personality disorder might affect bulimics' perceptions Wonderlich and Swift (1990) administered a parental relationship scale to eating disorder subjects diagnosed by DSM-III-R with borderline personality disorder, eating disorder subjects with other personality disorders, eating disorder subjects without personality disorders and normal control subjects. According to the results eating disorder subjects with borderline personality disorder compared to the other groups perceived more hostile relationships with their parents (Wonderlich & Swift, 1990). These results would once again suggest that the reported negative family environment is not directly implicated in the etiology of bulimia nervosa.

The Assessment of Personality

Questioning the accuracy of bulimics' perceptions of their family environment based on the concurrent biasing effects of mood and personality disorders has serious

implications for the treatment of bulimia nervosa. Such a conclusion could direct therapeutic focus more singularly on the treatment of personality disorders in relation to bulimia nervosa, and away from the family dynamics that may be involved. It is therefore of real concern that the research that has examined the prevalence of personality disorders is so variable in terms of comorbidity rates. Given that the primary reason provided for such variability centres on the diagnostic bases, it is reasonable to examine the assessment of personality disorders more fully.

An array of instruments are available to diagnose personality disorders. Psychodiagnosticians have expressed concern about the validity of these instruments and this has led to increased research on the validity of diagnostic methods. The validity of assessment instruments can be examined by making diagnostic comparisons across instruments. A few studies have compared a self-report questionnaire with a clinical interview, while others have made comparisons among clinical interviews (Hyler et al., 1990; Skodol et al., 1988; O'Boyle et al., 1989). These studies generally report high diagnostic agreement among interviews and low agreement between an interview and a self-report questionnaire format. Thus, Hyler et al. (1990) suggested that the degree of diagnostic agreement may depend upon the format of the instruments that are compared.

DSM-III-R Axis-II Personality Disorders

Personality traits are defined as enduring patterns of behaviour that are exhibited in a variety of social and personal contexts. Personality traits become personality disorders when the traits are maladaptive and ubiquitous and evidently cause substantial functional impairment and subjective distress (American Psychiatric Association, 1987). When personality disorders are diagnosed, behaviour that has occurred since early adulthood and particularly during the past year is focused upon. According to DSM-III-R, the diagnosis of a personality disorder should not be based entirely on discrete episodes of illness but rather on characteristic features that are typical of long term behaviour (American Psychiatric Association, 1987).

The classification of personality disorders is performed by groups of professionals such as biometricians and clinicians who (on the basis of clinical research) assign names to the personality types and determine criteria which identify the personality disorders (Widiger & Frances, 1987). This approach assumes that clinical descriptions of personality disorders are automatically valid (Tyrer & Ferguson, 1987).

Personality disorders are located on Axis-II of DSM-III-R which uses a categorical system for the classification of these disorders. Personality disorders are of interest to the present study since they may be

associated with bulimics' negative perceptions of their family environment. The diagnosis of personality disorders is based on a nominal scale of measurement in which diagnostic criteria define disorders that are presumably homogeneous and belong to distinct categories. The categorical system is considered by proponents to be useful because it is concise in its summary of information and it provides conceptual ease (Widiger & Kelso, 1983). As such, proponents of the categorical system argue that it facilitates the discovery and validation of discrete syndromes and specific causes (Widiger & Frances, 1985). However this approach has been criticized because most DSM-III-R diagnoses are based on limited empirical data and the boundary between the presence and absence of a personality disorder is inherently arbitrary and the optimal cutoff points for establishing personality disorder diagnoses remain unclear (Widiger & Frances, 1988; Widiger, Frances, Spitzer, & Williams, 1988).

DSM-III-R Axis-II diagnostic criteria for the diagnosis of a personality disorder is polythetic. This means that a set of criteria are provided for the diagnosis of each disorder (Widiger et al., 1988). Each polythetic category of DSM-III-R consists of 7 to 10 items. Only four to six criteria sets are necessary for the diagnosis of a personality disorder. On the one hand, polythetic criteria improve reliability because the presence of every item that

corresponds to a given disorder is not necessary for diagnosis. Moreover, the criteria allow for the inclusion of items that are not always present, but are helpful in diagnosis. On the other hand, polythetic criteria can also lower reliability because the criteria are not always well defined and the clinicians have to use their judgement to diagnose the personality disorder (Widiger & Frances, 1985). Reliability could be improved by clearly operationalizing the criteria (Widiger & Kelso, 1983).

Polythetic criteria sets have been criticized for their flexibility, since there are many different ways by which the patient can meet criteria for a personality disorder (Widiger et al., 1988). Therefore, when a particular personality disorder is diagnosed, principal criteria may not necessarily be part of the diagnosis. Some have suggested that items could be weighted in terms of their importance to the diagnosis (Widiger et al., 1988).

The structured interviews, semistructured interviews and self-report questionnaires discussed below use either DSM-III or DSM-III-R criteria to diagnose personality disorders. Therefore the underlying assumptions to these tools is that personality disorders are categorical, and the criteria sets are polythetic. As a result diagnosis is not clear cut, and so may be inherently subject to variation as a function of the assessment procedure used. Assessment procedures further differ in terms of the degree of format

structure and hence flexibility of clinical interpretation.

Structured Interviews

Because there are no physical indicators of psychiatric illness, diagnoses depend upon the psychiatric interview which has questionable reliability since it requires that the psychiatrist make a judgement on either the presence or absence of disorders. Psychiatrists' clinical impressions have typically been used as the yardstick (gold standard) against which the diagnoses of lay interviewers are judged. This presents a dilemma since psychiatrists' clinical impressions may not always accurately indicate either the presence or the absence of a disorder, because psychiatrists are not infallible (Robins, 1985). However, if structure is added to the psychiatric interview, then diagnostic sets held by the psychiatrist can be minimized (Helzer, 1981). Therefore to the extent that the interview is valid then the diagnostic judgements of the psychiatrists should be reliable and valid.

Structure in the context of an interview refers to the presentation of questions in the same format and wording to each respondent. The structured format assures that information obtained from the respondent will be comprehensive and collected reliably by the clinician (Cohen, Nathanson, & Swerdlik, 1988; Graham & Lilly, 1984). Moreover, the structured format allows other health care professionals and even lay persons to make diagnoses, thus

saving the psychiatrist time to pursue other health care obligations (Helzer, Robins, Croughan, & Welner, 1981).

The Research Diagnostic Interview (RDI) presents the basic structure underlying most structured personality disorder instruments. The RDI uses the Feighner diagnostic system that arranges symptoms into groups so that a positive diagnosis requires not only a minimum number of symptoms but also a representative distribution of them (Robins, Helzer, Croughan, & Ratcliff, 1981). The symptoms must meet a minimum standard of severity and they must not be explainable by either physical illness or another psychiatric diagnosis (Helzer et al., 1981). The Feighner diagnostic system provides exclusion criteria and a maximum age of onset for the development of each personality disorder. The RDI evaluates symptoms by specifying questions that the clinician should ask, and provides specific probes that the clinician can use to establish severity criteria and to distinguish psychiatric symptoms from the consequences of either physical disease or substance abuse (Helzer et al., 1981).

The RDI provided the framework for the development of the more comprehensive Diagnostic Interview Schedule (DIS; Robins, Helzer, Croughan, & Ratcliff, 1981). The DIS was designed for the Epidemiological Catchment Area (ECA) series of population prevalence studies at the request of the National Institute of Mental Health (NIMH) and enabled lay

interviewers to obtain psychiatric diagnoses comparable with diagnoses made by psychiatrists (Robins et al., 1981). The DIS is one of the most comprehensive and commonly used structured interviews for the diagnosis of clinical syndromes which are found on Axis-I of DSM-III-R. Extensive research has been conducted on the validity of the DIS as a structured assessment tool. As a prototype structured interview the DIS and the approaches used to validate it merit more detailed consideration.

The DIS is a structured psychiatric interview that can make DSM-III Axis-I diagnoses by employing three systems: (a) DSM-III criteria, (b) the Feighner criteria, and (c) the Research Diagnostic Criteria (RDC). Diagnoses can be made by using all three systems, since they share certain features and concur on most of the symptoms of specific disorders (Robins et al., 1981). The three systems arrange symptoms into groups so that a positive diagnosis requires not only a minimum number of symptoms but also a representative distribution of them (Robins et al., 1981). A minimum standard of severity must also be met. Each system requires that the symptoms occur together and dissipate together, forming a discrete episode (Robins et al., 1981). As with the RDI, the systems require that the symptoms not be explainable by physical illness or another psychiatric diagnosis (Robins et al., 1981).

DIS diagnoses are made on a life-time (historical)

basis. The DIS inquires about how recently the last symptom occurred and then counts the total symptoms across diagnoses; counts the number of criteria met for each diagnosis and provides a list of positive diagnoses. As with the RDI, to assess the severity of positive symptoms, the DIS determines whether medical help was ever sought by the patient.

The DIS provides a probe flow chart which specifies all questions to be asked and which probes to be used by the clinician. By using this chart as a guide, the uncertainty which the interviewer may have about deciding how to phrase questions and when to use probes in order to determine whether the patient's symptoms are severe enough to meet criteria is reduced. The inclusion of a probe flow chart minimizes the interviewer's bias by reducing their degree of clinical judgement (Helzer, 1981; Hesselbrock, Stabenau, Hesselbrock, Mirkin, & Meyer, 1982; Robins et al., 1981).

Robins et al. (1981) investigated the procedural validity of the DIS administered by psychiatrists and lay interviewers. Agreement between lay interviewers' and psychiatrists' diagnoses made by the DIS was assessed. According to the results, interjudge agreement on all scales was at least within the moderate (acceptable) range. The accuracy of the lay interviewers' diagnosis was also high in terms of correct diagnosis relative to that of the psychiatrist. In particular, the mean sensitivity

(percentage of cases correctly identified) of the lay interviewers' diagnosis was 75% (range 41%-100%) and the mean specificity (percentage of noncases correctly identified) was 94% (range 84%-100%). In sum, according to these comparisons, there was satisfactory agreement between psychiatrists' and lay interviewers' DIS diagnoses.

Robins et al. (1981) indicated that in order to study the validity of an instrument it is necessary, ideally, to have an absolute standard against which to compare the instrument. In the Robins et al. (1981) study, the DIS administered by psychiatrists was used as the yard stick against which to measure the DIS administered by lay interviewers. These authors indicate that this comparison is imperfect because psychiatrists are not infallible (Robins et al., 1981).

In yet another study, Robins, Helzer, Ratcliff and Seyfried (1982) investigated the validity of the DIS by using the same data as Robins et al. (1981). However, in this study the lay interviewers' and psychiatrists' DIS diagnoses were further compared to the patients' medical charts. The results indicated that 63% of all diagnoses in the charts were identified by psychiatrists who used the DIS, while only 55% were identified by lay interviewers using the DIS. These rates appear to be quite low suggesting that relative to medical charts, the DIS is not highly sensitive to the diagnoses of clinical disorders.

However, Robins et al. (1982) found that the DIS was better at identifying medical chart diagnoses than the medical chart was at identifying DIS diagnoses. The authors accounted for this result by suggesting that either psychiatrists did not record all of the diagnoses in the patients' medical charts or they did not use standard criteria in order to determine diagnoses from medical charts. As a result Robins et al. (1982) concluded that clinical charts are perhaps not an adequate standard against which to measure the validity of an instrument.

Therefore, at this point the DIS appears to be of sound procedural validity and interjudge reliability, in that it can be correctly and reliably administered by lay person and clinician alike. Nonetheless, despite being one of the most comprehensive and commonly used structured interviews, the clinical validity of the DIS as a diagnostic tool remains open to further examination. However, this problem is endemic to the assessment of the validity of any diagnostic tool given the lack of a clear standard for comparison.

Computer Interviewers and Computer Diagnosticians

A relatively recent trend in the development of tools for assessing personality disorders is the adaptation of structured interviews for administration by computer. A number of clinicians extol the benefits of using computers as interviewers and diagnosticians (Blouin, 1991; Car, Gosh, & Ancill, 1983; Ginsberg, 1993; Levitan, Blouin, Navarro, &

Hill, 1991; Maultsby & Slack, 1971; Skinner & Allen, 1983; Slack, Hicks, Reed, & VanCura, 1966). According to clinicians, computer interviews may be beneficial because information can be accurately stored, scored and legible assessment summaries can be obtained.

Computers inherently exert structure over the interview. They are programmed to proceed with questioning only after an appropriate response is made by the subject. They simplify questions by either restating or rephrasing them. They omit the occurrence of incomplete responses made by the subject, and are therefore thorough. Indeed, Simmons and Miller (1971) reported that physicians missed 35% of the items obtained by a computer that inquired about a patient's medical history. Similarly Car, et al (1983) compared computer-elicited case histories to physicians' recorded case histories. Ninety percent of the patients' computer recorded responses were confirmed by physicians' recorded histories. Moreover, the computer interview elicited an average of 5.5 items per patient that were unknown to physicians, and that were not recorded in the patients' medical charts.

Taken together, these studies indicate that computers may be beneficial because they can elicit information from the patient that might otherwise remain unknown and unreported. By using computers in the assessment protocol, clinicians can review the computer summaries and recommend

treatment for the patient. This method would evidently save them diagnostic time and possibly reduce the number of patients on waiting lists for clinical assessments.

When patients are asked to give their opinion on computer interviews, most of them indicate that computer interviews are enjoyable, relaxing, shorter in duration and less anxiety provoking than clinical interviews (Car et al., 1983; Mathisen, Evans, & Meyers, 1987; Maultsby & Slack, 1971; Skinner & Allen, 1983; Slack et al., 1966). Patients indicate that the computer interview is less anxiety provoking because they are uncomfortable reporting embarrassing information to a clinician.

Although computers may be beneficial to patients and clinicians, they nonetheless have limitations. Computers are criticized by some patients and clinicians for their impersonal, detached, and inhuman nature. Moreover, unlike clinicians, computers cannot monitor tone of voice and posture which some clinicians consider important in formulating a diagnosis. There is also the possibility that computers may malfunction and thus inevitably delay assessments.

The Computer Diagnostic Interview Schedule (CDIS) and the Computer Personality Disorder Interview (CPDI) are structured self-report computer interviews that are widely used in clinical practice and research. The CDIS is the computer version of the DIS discussed previously and it uses

DSM-III Axis-I criteria. Reliability and validity of the CDIS have been firmly established relative to the DIS (Blouin et al., 1988; Levitan, et al.; Mathisen et al., 1987), suggesting that the computerization of structured interviews is a viable assessment strategy. The CPDI is a more recently developed structured computer interview that uses DSM-III-R Axis-II criteria. It is beginning to receive widespread recognition, and therefore merits and requires further independent validation.

The Computer Personality Disorder Interview

In 1991, Blouin developed the CPDI in order to simultaneously classify patients according to DSM-III-R Axis-II criteria and to assess symptom severity by using a personality dimensional model. After reviewing the diagnostic criteria for the personality disorders of DSM-III-R, questions that pertained to the diagnostic criteria for the disorders were composed. Personality disorder items were then examined for face validity by a group of professionals.

The CPDI assesses 10 DSM-III-R personality disorders:

(1) paranoid, (2) schizoid, (3) schizotypal, (4) borderline, (5) histrionic, (6) narcissistic, (7) avoidant, (8) dependent, (9) obsessive compulsive, and (10) passive aggressive. The interview can be administered to the following participants: 1. the patient, 2. an informant of the patient (either a family member or a friend), or 3. a

clinician who is familiar with the patient. Scoring of the responses is performed automatically by the computer which uses preprogrammed diagnostic decision rules.

The reliability and discriminant validity of the CPDI was examined by Ginsberg (1993). According to the results, the interjudge concordance between the computer and clinician diagnoses was variable, ranging from poor (avoidant personality disorder to high (schizoid personality disorder). Test-retest correlation coefficients were high ranging from .74 (obsessive compulsive personality disorder) to .90 (schizotypal and borderline personality disorders) (Ginsberg, 1993). The CPDI was also found to discriminate between subjects with histories of psychiatric complications, psychiatric treatment recommendations, psychiatric treatment, substance abuse, family histories of psychiatric treatment, depression, and subjects without histories of these variables (Ginsberg, 1993).

The CPDI can differentiate between the personality disorders typically obtained by eating disorder patients and stress management outpatients. Eating disorder outpatients are more likely to receive diagnoses of schizotypal, histrionic and borderline personality disorders compared to stress management outpatients. This personality profile of eating disorder patients is similar to the profile reported by Wonderlich et al. (1990) who administered the Structured Clinical Interview for DSM-III-R Personality Disorders

(SCID-II) to outpatients. This suggests that the CPDI may be just as valid as the SCID-II at diagnosing personality disorders among eating disorder outpatients.

Thus based on past research, structured interviews, and particularly computerized structured interviews are a reliable method of collecting personality information from patients and making diagnoses. The format allows for consistent and comprehensive assessment of respondent symptomatology. Because of the specific detailed nature of the questioning, they can be administered by clinicians, lay interviewers or the computer. However, while their discriminant validity appears to be strong, their construct validity remains open to question. In particular, the assessment of construct validity remains tied to an examination of consistency across assessment devices, which themselves reflect imperfect indicators of the constructs in question.

Semi-Structured Interviews

In contrast to structured interviews, semi-structured interviews allow the administrator to depart from the specific question format in order to ask their own questions to clarify the patient's ambiguous responses (Hyler, Rieder, Williams, Spitzer, Hendler, & Lyons, 1988). Semi-structured interviews can be administered by either a clinician, or a trained interviewer who follows the structured format provided in an assessment booklet. Numerous semi-structured

interviews have been developed to assess DSM-III personality disorders, including the Diagnostic Interview for Personality Disorders (DIPDI; Zanarini, 1983), Personality Disorder Examination (PDE; Loranger, Susman, Oldham & Russakoff, 1985) and the Structured Interview for DSM-III Personality Disorders (SIDP; Pfohl, Stangl and Zimmerman, 1983). The interjudge and test-retest reliabilities of these scales have been documented to be relatively high.

The Structured Clinical Interview for DSM-III-R Axis-II (SCID-II; Spitzer, Williams, Gibbon, & First, 1990) is commonly used by clinicians for the diagnosis of personality disorders. The SCID-II is a 113-item interview that is designed to assess eleven DSM-III-R personality disorders, as well as self-defeating personality disorder which is described in Appendix A of DSM-III-R. The SCID-II has an overview set of open-ended questions used by the clinician to obtain a general idea of the patient's personality and to provide the clinician with general information on the patient's thoughts about their own personality. The clinician then begins the SCID-II interview by asking the patient questions presented in the interview booklet.

The SCID-II presents each personality disorder separately. This is beneficial because the clinician is always aware of the questions that apply to each personality disorder. The arrangement of the SCID-II personality disorders differs from the arrangement of personality

disorders in DSM-III-R. When the SCID-II is administered, the clinician initially inquires about personality dysfunction from Cluster C (the anxious/fearful cluster) (e.g., avoidant, dependent, obsessive-compulsive, passive-aggressive), in order to establish rapport with the patient (First, Spitzer, Gibbon & Williams, 1994). Inquiries from Cluster A (paranoid, schizoid, schizotypal) and Cluster B (antisocial, borderline, histrionic narcissistic) follow inquiries from Cluster C.

The SCID-II assessment booklet presents each personality disorder on a page. Each page of the booklet is divided into 3 sections. The first section includes the questions to be asked by the clinician during the interview. The second section presents DSM-III-R diagnostic criteria. The third section presents decision choices regarding the disorder, including "inadequate information", "absent", "subthreshold", or "threshold". The respondent is considered threshold if there is sufficient evidence that the characteristic described by the patient is pathological, persistent and pervasive. Pathological is defined as behaviour that the patient describes to be outside the usual range of variation for their subculture (First et al., 1994). Persistent refers to both the frequency and duration of the characteristic described by the patient (e.g., the characteristic has been present over a period of at least the last five years). Pervasive refers to characteristics

described by the patient that are apparent in various contexts with various people (e.g., at home, at work, with family, with friends). To facilitate the clinician's threshold rating, there are specific decision-making guidelines provided for each personality disorder. If the clinician detects that the patient has not provided enough information in response to the questions outlined in the interview booklet to allow them to make a decision rating then the clinician can ask their own questions to assess pathology, persistence and pervasiveness.

There are two methods by which the SCID-II can be conducted. The first method involves administering a SCID-II personality disorder screening questionnaire (PDSQ) to the patient prior to the SCID-II interview. When this questionnaire is used, the clinician is not required to ask the patient every question pertaining to each personality disorder. When using the PDSQ, the duration of the interview is reduced.

The second method of conducting the SCID-II interview involves omitting the PDSQ. When this method is used, the clinician is required to ask the patient every question which pertains to each of the personality disorders. This is the recommended method of administration, since the clinician can obtain a complete assessment of the patient's personality functioning (Spitzer et al., 1990).

The criterion validity of the SCID-II has been examined

by comparing its diagnoses to diagnoses made by the "longitudinal expert evaluation using all data" (LEAD; Skodol, Rosnick, Kellman, Oldham, & Hyler, 1988). The LEAD was proposed by Spitzer (1983) as a criterion against which interviews could be compared when there are no distinct external validators. A psychiatrist administered the SCID-II to inpatients. The patients were observed by health care professionals as they performed daily activities on the ward (e.g., with family; in psychotherapy). After a pattern of patient behaviour was observed a LEAD conference was held. The conference allowed the professionals from whom the SCID-II diagnoses was withheld to rate each criterion of every DSM-III-R personality disorder by consensus on the basis of patients' behaviour in a variety of contexts. The results indicated that 4.6 personality disorders were diagnosed per patient by the SCID-II, while 4.1 diagnoses per patient were made by the LEAD. Eighty percent of the patients received diagnoses of borderline personality disorder by the SCID-II, while 95% of the patients were diagnosed as having borderline personality disorder by the LEAD. The degree of diagnostic concordance between the LEAD and the SCID-II per patient was not reported in this study. Nonetheless, this study would suggest that the criterion validity of the SCID-II is relatively good in terms of sensitivity to disorders.

Self-Report Questionnaires

Self-report questionnaires are another method by which

personality disorder information can be obtained from a patient. Although this method is concise and consequently easier and quicker to use than either structured and semistructured interviews, this method of self-report has been criticized as particularly susceptible to response sets that can interfere with the accuracy of information necessary to make a diagnosis.

The prototype of the self-report questionnaire is the Personal Data Sheet (PDS) that was developed by Woodworth (1917) during World War I, at the request of the US military. This questionnaire was used to identify draftees who would not be suitable for military duty because of their psychopathology. Woodworth (1917) used the PDS as a blueprint for the development of a self-report questionnaire referred to as the Psychoneurotic Inventory (PNI) that was used to assess civilians' personality. The PNI was the first widely used self-report personality questionnaire that established the foundation for the development of numerous succeeding self-report personality questionnaires (Cohen, et al., 1988).

The Personality Diagnostic Questionnaire (PDQ) is a 163-item true/false self-report questionnaire that assesses DSM-III personality disorders (Hyer, Reider, & Spitzer, 1982). The items that assess each personality disorder are clearly presented and thus easily understood by the patient. On the one hand, this may jeopardize the collection of valid

information, because the patient may decipher the theme addressing a specific personality disorder and consequently withhold or distort information. On the other hand, the item presentation format of the PDQ may be beneficial because the patient can easily organize their thoughts about their behaviour.

The Personality Diagnostic Questionnaire Revised (PDQ-R) (Hyler & Rieder, 1984) is a revised version of the PDQ, reflecting DSM-III-R personality disorder diagnoses and provisional diagnoses for self-defeating and sadistic personality disorders. The item presentation format of the PDQ-R is the same as the PDQ including 162 true/false items. Each personality disorder is organized on a given page. The patient's attention is focused on their usual behaviour, by beginning each page with the statement "over the past several years...", followed by the relevant set of items.

A limitation of such self-report questionnaires is the fact that a subject rarely encodes their perceptions and attitudes about themselves in a "yes/no" format (Perry, 1992). Therefore, the accuracy of these questionnaires in collecting thorough and reliable information is debatable.

Another limitation of self-report personality questionnaires is that the respondent may intentionally withhold information (e.g., impression management) or provide inaccurate information about themselves (Cohen et al., 1988; Graham & Lilly, 1984). Moreover, these

questionnaires are susceptible to other response sets such as demand characteristics and acquiescence (Cohen et al., 1988). Demand characteristics occur when the subject responds in a way that will either confirm or deny the expectations of the clinician. The quiescent subject responds in the affirmative when administered tests which require them to respond either "true/false", "yes/no" or, "agree/disagree"; while the acquiescent subject disagrees with most questions. Therefore most questionnaire inventories such as the Minnesota Multiphasic Personality Inventory (MMPI; Hathaway, & McKinley, 1930), the MCMI and the PDQ-R have specific scales to detect response sets.

The PDQ-R has three scales used to detect response bias. The first scale is referred to as "impairment distress". This scale measures the extent of impairment/distress experienced by the patient in social and occupational contexts. An example item is "I haven't gotten as far in life because of the kind of person I am". High scores on this scale indicate that the patient shows significant impairment to warrant the diagnosis of personality disorder, irrespective of their responses on the entire questionnaire (Hyler, 1984).

The second scale is referred to as "too good" (Hyler et al., 1984). This scale determines whether a patient is under-reporting their personality pathology. An example item includes "occasionally I talk behind people's backs".

The third scale is referred to as "suspect questionnaire". This scale is used to determine if the patient is taking the questionnaire seriously by not responding randomly (Hyler, et al., 1984). For example, the respondent might agree that "a nuclear war may not be such a bad idea". This response would be an indication that responses on the entire questionnaire may have been responded to randomly (Hyler et al., 1984).

To determine if the results of the PDQ-R are meaningful, Hyler et al. (1984) recommended that clinicians initially score these scales before scoring the entire questionnaire. In order to further reduce response bias, 15 to 20% of the patient's pathological responses to the PDQ-R items require a response of "false".

The PDQ-R is easy to score. The total PDQ-R score (which is an index of the overall personality disturbance) is calculated by summing the patient's total scores for each personality disorder, with high scores indicating a substantial likelihood that the patient has a significant personality disturbance. Because scoring is so straight forward the interjudge reliability of the PDQ-R is high.

Hyler, Skodol, Kellman, Oldham and Rosnick (1990) administered the PDQ-R, Personality Disorder Examination (PDE) (a DSM-III based semistructured interview), and the SCID-II to psychiatric inpatients to examine the convergent validity of the PDQ-R by comparing its diagnostic results to

the diagnostic results of the PDE and the SCID-II. The PDQ-R diagnosed more personality disorders among these patients than did the PDE and the SCID-II. The PDQ-R generated more multiple diagnoses than did the PDE and the SCID-II. When the instruments were paired (e.g. PDQ-R vs. SCID-II; PDQ-R vs PDE; PDE vs. SCID-II), the agreement between the instruments and the reliability among them was modest for all personality disorders diagnosed (Hyler et al., 1990). Diagnostic agreement was generally good among the PDE and the SCID-II interviews, although for some of the disorders, the PDQ-R had comparable agreement with one or the other of the interviews (Hyler et al., 1990).

Because only modest agreement was found between the instruments, Hyler et al (1990) indicated that the PDQ-R is neither a substitute for the semi-structured interviews nor is one interview a substitute for another. Hyler et al. (1990) recommended that positive diagnoses made by the PDQ-R be verified for clinical significance by a clinician's interview. This is similar to the protocol used for the SCID-II.

In a recent study of outpatients, Hyler, Skodol, Oldham, Kellman, and Doidge (1992), first administered the PDQ-R and then the PDE and the SCID-II 6-9 weeks later. Again the PDQ-R was found to diagnose more personality disorders than did either the SCID-II or the PDE. The PDQ-R generated many false positive diagnoses and few false

negatives (Hyer et al., 1992). However, the SCID-II yielded more personality diagnoses on average than did the PDE. Extensive personality disorder diagnoses were made for most patients regardless of the type of instrument administered (Hyer et al., 1992).

When the instruments were paired, the mean agreement between them was poor for the PDE and PDQ-R, and poor for the SCID-II and PDQ-R. Agreement was moderate for the SCID-II and PDE interviews. These authors accounted for the poor agreement between the PDQ-R with the PDE and the SCID-II by suggesting that too much time elapsed between the administration of the PDQ-R and the administration of the two interviews which occurred between 6 to 9 weeks after the patients were administered the PDQ-R. Patients' symptoms may have improved due to clinical treatment during these weeks and could have invalidated the comparison between the instruments. Therefore, the symptoms that the patients reported on the PDE and on the SCID-II may not have been as severe or as many as those which they reported on the PDQ-R.

However consistent with Hyer et al. (1990) the second factor that may account for the poor agreement between the PDQ-R, PDE and the SCID-II is the format. The fact that moderate agreement was found between the interviews, but not when they were paired with the PDQ-R suggests that acceptable agreement may be found between instruments of a similar format rather than between instruments of different

formats.

Past research has strongly implicated response bias in diagnoses stemming from self-report questionnaires (Vitousek & Frederic, 1994). However, it appears on the basis of comparing rates of diagnoses with an interview format that bias to a positive diagnosis is evident when based on the self-report PDQ-R.

The extent of response bias in computer administered interviews has not been examined. However, it has been argued that one of the advantages of computer-administered interviews is that respondents can feel more comfortable reporting embarrassing or anxiety provoking information (Caret et al., 1983; Mathisen, et al., 1987; Maultsby & Slack, 1971; Skinner & Allen, 1983). Moreover, the computer also reduces respondents' ability to withhold information by forcing them to provide a response before continuing. If the computer-administered interview does in fact reduce these forms of response bias, this would suggest that, as with the self-report questionnaire, there may be a bias to positive diagnosis. However, it is possible that this apparent bias reflects greater validity of diagnoses due to the quality of information provided by the respondent.

One way to untie diagnostic differences as a function of respondents' deliberate response manipulation, as opposed to reflecting more accurate self-presentation would be to evaluate the individual based on information from an

"informed" other. For example, a subject's personality diagnosis can be examined for accuracy by asking a family member or a friend to provide their own perceptions of the subject's personality. Obtaining personality information from such informants is useful for a number of reasons: 1. the informant is familiar with the subject, 2. the subject may not have enough insight to describe their own personality because their acute symptoms may obscure their perceptions of their premorbid personality, 3. the subject may deny socially undesirable and embarrassing behaviours and attitudes (Tyrer, Alexander, Cicchetti, Cohen, & Remington, 1979; Widger et al., 1989; Zimmerman, Pfohl, Stangl, & Corenthal, 1988).

Acquiring personality information from an informant is not exempt from bias either. The informant will have their own emotional involvement with the subject, and in fact the informant may also have characteristics (e.g., depression) that may influence the accuracy with which they provide information about the subject. All of these factors have been demonstrated to affect perceptions and thus the accuracy of information provided (Bulik, 1987; Garfinkel, Moldofsky, & Garner, 1980; Gershon, Hamouit, Schreiber, Dibble, Kayle, Nurnberger, Andersen, & Ebert, 1983; Herzog, 1982; Hudson et al., 1983; Kuntz et al., 1992; Piran, Kennedy, Garfinkel, & Owens, 1985; Pyle et al., 1981; Strober, 1981; Yurgelun-Todd, Kog & Vandereycken, 1985).

Few studies have compared the diagnostic concordance between subjects' perceptions of their personality with informants' perceptions (Tyrer et al., 1984; Tyrer, et al., 1979; Zimmerman et al., 1988). The reason for this is the limited number of personality disorder inventories and interviews that can be administered to both the subject and an informant. The Structured Interview for DSM-III-R Personality Disorders (SIDP) and the CPDI are the only personality instruments currently available that can be administered to both subjects and informants.

In a study performed by Zimmerman et al. (1988), subjects who met DSM-III criteria for major depression and a friend of each subject were administered the SIDP in order to examine their diagnostic concordance. These authors found poor diagnostic agreement between subjects and their friends. In general, friends reported more pathological behaviour than did the patients.

A longitudinal study was performed by Herjanic and Reich (1982) in order to examine the diagnostic agreement between mothers and their children. A structured psychiatric diagnostic interview was administered to 307 children ages 6 through 16 and their mothers. The children were required to answer questions about themselves, while their mothers were required to answer the same questions about their children. Good agreement between the mother and child was obtained for observable, behavioral symptoms

(e.g., social adjustment), and poor agreement was obtained when a judgement was required concerning either the presence, absence or severity of the disorder (e.g., anxiety, depression, and obsessions) (Herjanic & Reich, 1982). Mothers compared to their child were more likely to report significantly more severe symptoms. These studies together suggest that respondents may be less likely to admit to nonverifiable symptoms of distress, relative to the reports of informed others.

The Present Investigation

Rationale

Clinical theory and research links disturbed family relationships to the origin and maintenance of eating disorders. A number of researchers concede that the family environment of bulimics can precipitate the onset of bulimia nervosa (Bailey, 1991; Johnson & Pure, 1986; Minuchin, Rosman, & Baker, 1978; Root, Fallon, & Friedrich, 1986). However, researchers also argue that the extremely distressed family environments reported by bulimics may actually be a response by the family system to having a bulimic family member (Kent & Clopton, 1992).

The first goal of the present investigation was to examine bulimics' perceptions of their family environment as a function of their clinical status. All participants in the present study were bulimics who had received treatment. These subjects were divided into those whose symptoms had

remitted versus those who were only partially remitted. This subdivision was made since previous studies have not assessed whether an improvement in bulimics' clinical status after treatment was accompanied by an improvement in their perceptions of family environment (Johnson & Flach, 1985; Ordman & Kirschenbaum, 1986). The successful treatment of bulimia nervosa, and a concurrent improvement in family functioning would tend to support the notion that the family distress reported by bulimics may reflect the family's attempt to cope with the bulimic family member, rather than being a causal factor in the development of the disorder.

Bulimics' perceptions of their family environment can be examined by asking them to describe these perceptions. Past research has found that when the pattern of responses to the scales assessing perceptions of the family's social environment are examined, bulimic women compared to normal control women perceive almost uniformly extremely negative family environments (Johnson & Flach, 1985). However, these negative perceptions are not unique to bulimics per se but have also been reported by those presenting with depression and personality disorders that tend to co-occur with bulimia nervosa. Comorbid personality disorders may bias bulimics' perceptions of their family environment. As a result, changes in the family environment reported by the bulimic may be a function of perceptual changes due to reductions in depression and personality disorders, as opposed to

reflecting real changes in the family environment. One way to assess this possibility is to examine whether the remitted versus partially remitted bulimics differ on depression and personality disorders. If they do not, then any differences in perceptions can be attributed to real differences in the family environment as opposed to perceptual bias. If they do differ on personality disorders, then comparisons might also be made in their perceptions of their family environments. This comparison however is also confounded by the clinical status of the bulimic that may in itself affect the family environment.

Therefore, another possibility for examining the family environment of the bulimic is to assess the perceptions of other family members who presumably do not display the bulimics' clinical condition or comorbid disorders. There are not a lot of studies which have examined bulimics' relatives' perceptions of their family environment. A few studies have examined parents' perceptions (Humphrey, 1986a; Stern et al., 1989; Salkin, Burroughs, & Morrell, 1982). When bulimics' perceptions of their family environment are compared to those of their parents, parents, particularly mothers, generally report a more positive family environment than do the bulimics.

Stern et al (1989) administered the FES to a group of anorexics, bulimic-anorexics, a group of bulimics and their parents. Stern found that the parents of anorexics,

bulimic-anorexics and bulimics perceived their family environment more positively in most areas assessed by the FES compared to their daughters. Similarly, Humphrey (1986a) administered the FES to bulimic-anorexics, bulimics, normal control subjects and the parents of each group. On average bulimic-anorexic families (e.g., mothers, fathers and bulimic-anorexic daughters) and bulimic families (e.g., mothers, fathers and bulimic daughters) agreed that their family environment was less supportive, and less involved compared to the reported family environment of normal control families (Humphrey, 1986a). However, the perceptions of the mothers of bulimics did not differ from those of the mothers of normal control subjects on most of the FES subscales. The fathers of bulimic-anorexic daughters and the fathers of bulimic daughters agreed on their perceptions of their family environment, indicating that their family environment was more isolated, nondisclosing, and detached compared to the family environment perceptions of normal control fathers and daughters (Humphrey, 1986a). The parents of bulimics and bulimic-anorexic subjects compared to the parents of normal control subjects perceived their family environment to be less intellectually oriented (Humphrey, 1986a). All members of bulimic-anorexic and bulimic-families compared to normal control families reported significant problems with boundaries, organization, conflict, and moral-religious

emphasis (Humphrey, 1986a).

According to this study bulimic women seldom agree with both parents on their perceptions of family environment. An interesting outcome, is the agreement in perceived family environment between bulimic daughters and their fathers and the disagreement between mothers and their spouses and bulimic daughters. This would suggest that the bulimic may be more accurate in their perceptions than their parents' (and particularly the mother's) more idealized version. Alternatively, if the bulimics' perceptions were more negative due to bias stemming from their clinical status, then other family members' perception of the family environment should not differ as a function of the bulimics' clinical status, although the bulimics' own perceptions may be more positive with successful treatment.

The studies reviewed above did not evaluate parental depression, eating disorders, and substance abuse. As discussed previously, negative perceptions of family environment can be influenced by eating disorders, alcoholism and depression. Just as the depressed parents of normal children perceive their family environment negatively, depression may also influence the perceptions that the parents of bulimics have of their own family environment, since depression is prevalent among them (Bromet, Ed, & May, 1984; Hudson, Pope, Jonas, & Yurgelun-Todd, 1983; Stern, Dixon, Nemzer, Lake, Sansone, Smeltzer,

Lantz, & Schrier, 1984). There is no way of knowing whether either eating disorders, substance abuse or depression influenced parental perceptions of their family environment in the studies reviewed above, since these factors were not evaluated. In the present study, relatives were also examined for substance abuse and eating disorders that could influence the accuracy of their reports.

In sum, it was hypothesized that if remitted and partially remitted bulimics do differ on personality disorders and the bulimics' negative perceptions of the family environment are a result of comorbid personality disorders, then they should differ in their perceptions of family environment. Partially remitted bulimics should have more negative perceptions of the family environment. Moreover, if the remitted bulimics and relatives agree on perceptions of family environment, and partially remitted bulimics differ with relatives' perceptions of family environment, the argument can be made that the negative reports concerning the family environment made by bulimics are primarily a function of their own perceptual bias. However, to the extent the bulimic and family members agree in their descriptions of the family environment with those associated with the remitted bulimics being more positive than those of partially remitted bulimics, this would suggest that a negative family environment is in part a response to the bulimic symptomatology (i.e., there is a

consensus that the family environment is less dysfunctional when the bulimic individual is asymptomatic). In contrast, if the bulimics' negative perceptions are accurate descriptions of the family environment, and the negative family environment is a precipitating factor in the bulimics' status, both groups of bulimics will have similarly negative perceptions of the family environment.

An assessment of the extent to which bulimics' perceptions of their family environment are a function of biases due to personality disorders is contingent on the ability to accurately diagnose such disorders. An array of instruments are available to diagnose personality disorders. Psychodiagnosticians have expressed concern about the validity of these instruments and this has resulted in increased research to test their validity. The validity of personality assessment instruments is most frequently examined by making diagnostic comparisons. Previous studies have often reported considerable variability in agreement between assessment instruments for the diagnosis of individual personality disorders. This may be attributed to the format of the instruments that are compared. It was therefore a second goal of the present study to examine the diagnostic concurrence and validity of the instruments used to assess DSM-III-R personality disorders among bulimics, namely the computerized version of the PDI (CPDI), the SCID-II a semi-structured interview, and a self-report

questionnaire (PDQ-R).

To do this, bulimics and their relatives were administered a Computer Personality Disorder Interview (CPDI, Blouin, 1991). Remitted and partially remitted bulimics were asked to respond to the questions by reporting their own personality perceptions. The relatives were required to respond to the questions presented by the computer interview by indicating their perceptions of their bulimic relative's personality.

Partially remitted bulimic subjects were expected to report more personality disorders because these subjects were symptomatic (Kennedy et al., 1990; Swift et al., 1990; Rybicki et al., 1989; Yager et al., 1990). Research has demonstrated that these disorders are not found in abundance among asymptomatic bulimics and is apparently suggestive of an improvement in eating pathology that can lead to a reduction in personality pathology (Ames-Frankel et al., 1992; Gwirtsman et al., 1983; Joffe, & Regan, 1988; Kennedy et al., 1990; Levin & Hyler, 1986; Rybicki, Lepkowsky, & Arndt, 1989; Swift, Slotnick & Goodman, 1990; Wonderlich, et al., 1990; Yager, Landsverk, Edelstein & Hyler, 1989; Yates et al., 1989; Zanarini et al., 1990). To the extent that the CPDI results in more honest and accurate responses, it was also hypothesized that bulimic subjects would exhibit good and excellent diagnostic agreement with their relatives using the CPDI.

The diagnostic agreement between a structured computer personality interview (CPDQ), a semistructured personality interview (SCID-II) and a self-report personality disorder questionnaire (PDQ-R) was also examined. Previous research has frequently reported poor agreement between personality diagnostic instruments in general (cf. Perry, 1992, for a review). The poor agreement could be attributed to the comparisons made between instruments comprised of different formats. The interviews and questionnaire were expected to show some diagnostic agreement since they are all based on common theoretical frameworks. It was hypothesized that the CPDI and the SCID-II would demonstrate good diagnostic agreement with each other for the most part, because they use a similar format. Although the CPDI is more structured than the SCID-II, the SCID-II has sufficient structure that should allow for good diagnostic agreement. It was also hypothesized that the diagnostic agreement between the PDQ-R and the SCID-II, the PDQ-R and the CPDI would be poorer because these instruments have a different format, and the PDQ-R is most prone to response bias.

Method

Subjects

Bulimic outpatients who met DSM-III-R criteria for bulimia nervosa were selected to participate in the present investigation from treatment group lists that were on file at an eating disorder clinic. Those who were contacted had

previously indicated an interest in participating in research. The patients received treatment between the years 1990 and 1996 inclusive. The participation in the study ranged from 4 months to 5 years following treatment.

Eating disorder treatment involves the application of cognitive behavioral counselling techniques that are delivered in a 10 week program. There are 3 main components of this counselling: (1) educational, (2) behavioral, and (3) cognitive. The educational component educates bulimics on the medical risks of bulimic symptomatology, metabolic and neurochemical consequences of intermittent dietary restriction and set point weight theory. The behavioral component requires that bulimics self-monitor their food intake and purging behaviour on a daily basis. Bulimics are instructed by the therapist to experiment with graded exposure to reduction of purging and increasing retained food intake. The cognitive component requires that bulimics keep daily thought catching records pertaining to bulimic urges and episodes.

One criterion for participation in the present study required that patients had attended at least 8 treatment sessions. Patients who attended fewer sessions were not asked to participate in the study because it was believed that they would not have received the full benefit of the group that would be apparent in a reduction in their bulimic symptomatology. The second criterion for participation in

the study was that patients had no recent history of substance abuse. This was measured by the Personal and Family Medical History Questionnaire (PFMHQ). The third criterion for participation was that patients not be severely depressed. This criterion was used given that this study was attempting to assess the effects of remitted bulimic symptomatology on perceptions of family environment without the potentially biasing effect of depression and the presence of personality disorders. Since depression tends to co-occur with symptomatology, partially remitted bulimics were not excluded if they manifested mild depression levels. Again, partially remitted bulimics indicating more severe levels of depression were not included to ensure that the samples were as comparable as possible on all factors except bulimic symptomatology.

A total sample size of 80, was originally targeted. However two pairs of subjects (a remitted bulimic and her spouse, and a partially remitted bulimic and her spouse) declined to complete the study. The remitted bulimic subject indicated that the method of personality inquiry was extremely repetitive and that she found it unnecessary to answer the same items on subsequent questionnaires. The partially remitted bulimic subject only completed half of the session and indicated that she was too tired to continue. Data for these pairs of subjects were excluded

from the analysis, thus leaving a total sample size of 76.² Thus, the present investigation consisted of 19 remitted and 19 partially remitted bulimic women outpatients. The relatives of remitted bulimics consisted of mothers (n=6), sisters (n=4), and spouses (n=9). The relatives of partially remitted bulimics consisted of mothers (n=5), sisters (n=5), and spouses (n=9).

Bulimics were classified as remitted if they remained asymptomatic at the time of the study (e.g., 0 binge eating episodes and 0 vomiting episodes a week for at least 1 month. Bulimics were classified as partially remitted if they still experienced 2 or more binge eating and vomiting episodes a week for at least 1 month) at the time of the study. Subjects were asked to recall if they did or did not experience bulimic symptoms for at least a month.

Materials

Four general categories of measures were used: background information, symptoms of bulimia nervosa, personality disorders and perceptions of family environment. The measures completed by each group are indicated in Table 4.

Background Information

To assess bulimics' and relatives' background and history on relevant variables, they were asked to provide

²The power for a sample size of 76 is .80, with alpha set at .05 and a moderate effect size of .20 for the FES variables for bulimics and parents.

Table 4

Design

Groups	Questionnaires	Interviews
Remitted Bulimics n=19	BDI BSC PFMHQ PDQ-R FES	CPDI-S SCID-II
Relative of Remitted Bulimics n=19	BDI PFMHQ FES	CPDI-Q
Partially Remitted Bulimics n=19	BDI BSC PFMHQ PDQ-R FES	CPDI-S SCID-II
Relative of Partially Remitted Bulimics n=19	BDI PFMHQ FES	CPDI-Q

Note.

Relative of remitted bulimics= mother, sister, spouse, n=19
 Relative of partially remitted bulimics= mother, sister,
 spouse,
 n=19

information regarding their sex, marital status, current role (e.g., wage earner, housewife, student etc.), highest occupation level, highest education level. The bulimic women were also asked for information regarding their weight history in terms of current weight and ideal weight (see Appendix C).

Also administered to both the bulimic client and her relative was the Personal and Family Medical History Questionnaire (PFMHQ) which inquired about subjects' substance use (see Appendix C). Subjects indicated their response to the items by checking either "yes" or "no", and also recorded the number of alcoholic drinks they consumed per occasion. The PFMHQ can be completed in 20 minutes.

The Bulimic Symptom Check List (BSC)

To assess the patients' bulimic symptoms, they were administered the BSC. The BSC is a self-report list used to assess the number of bingeing, vomiting, and purging episodes experienced by the patient during the week. The BSC can be completed in 5 minutes. Total scores are calculated by summing the numbers which pertain to each behavioural dimension.

Personality Measures

Several personality measures were administered. Both the patient and the relative completed the Beck depression inventory. The patients then completed the PDQ-R, the SCID-II and the CPDI-S. Relatives completed the CPDI-Q assessing

their perceptions of the patient's personality.

The Beck Depression Inventory (BDI)

The BDI is a 21-item self-report questionnaire that examines the severity of weekly depressive symptoms. There are a group of 4 statements which pertain to each item. The statements are numbered and range from 0 (not severe) to 3 (severe). A BDI score is obtained by summing the numeric response to each of the 21 items. A score on the BDI between 0-11 is indicative of no depression; between 12-20 is indicative of mild depression; between 21-30 is moderate depression, and a score that is greater than 30 is indicative of severe depression. The BDI can be completed in 5 minutes. Beck (1967) reported a split-half reliability of .86 and a correlation of .65 between inventory scores and clinical judgements of depression.

The Personality Diagnostic Questionnaire Revised (PDQ-R)

The PDQ-R is a true/false, self-report questionnaire that provides DSM-III-R personality disorder diagnoses. It assesses paranoid, schizoid, schizotypal, borderline, histrionic, narcissistic, avoidant, dependent, obsessive-compulsive, and passive-aggressive personality disorders. The items that pertain to each personality disorder are presented on separate pages. The patient is required to indicate their responses by circling either "true" or "false" to items that examine a personality disorder. For 20 percent of the items per disorder, "false" would be the

pathological response. This feature of the PDQ-R minimizes the occurrence of response sets held by the patient.

The threshold score for each personality disorder is recorded on the bottom right of each page. Beside the threshold score, the total PDQ-R score which is a sum of the subject's total pathological responses for each personality disorder is recorded. Occasionally, the total PDQ-R score and the threshold score will be identical for a personality disorder. However the total PDQ-R score and the threshold score will differ when the patient responds pathologically to items that are comprised of two parts (e.g., 1a, 1b etc.). The letters "a" and "b" indicate that a pathological response to either item will meet the threshold level for criterion "1" etc. If both criterion "a" and "b" are scored pathologically, the item is only recorded once in order to determine if the threshold is reached. However, "1a" and "1b" are recorded as separate items in order to determine the total PDQ-R score for the personality disorder.

The Structured Clinical Interview for DSM-III-R Personality Disorders (SCID-II)

The SCID-II is a 113-item semistructured interview that is designed to assess 11 DSM-III-R personality disorders including paranoid, schizoid, schizotypal, borderline, histrionic, narcissistic, avoidant, dependent, obsessive-compulsive, and passive-aggressive personality disorders, as well as self-defeating personality disorder, which is found in Appendix A of DSM-III-R. The SCID-II has an overview

page which is used by the clinician or trained interviewer to obtain a general idea of the patient's personality, and to also provide the clinician with general information about the patient's thoughts about their own personality.

Following the administration of the overview page the clinician begins the SCID-II interview by asking the patient questions presented in the 30 page interview booklet. The SCID-II examines each personality disorder separately and displays the name of the personality disorder at the top of each page. Each page of the booklet is divided into 3 sections. The first section is on the left and it displays the questions to be asked by the clinician during the interview. The second section is in the middle and it presents DSM-III-R diagnostic criteria. The third section which is on the right presents three item rating choices (e.g., ?=inadequate information, 1=absent, 2=subthreshold, 3=threshold) to be used by the clinician. A rating of "3" is assigned if there is sufficient evidence that the characteristic described by the patient is pathological, persistent and pervasive. Pathological is defined as behaviour which the patient describes to be outside the usual range of variation for their subculture. Persistent refers to both the frequency and duration of the characteristic described by the patient (e.g., the characteristic has been present over a period of at least the last five years). Pervasive refers to characteristics

described by the patient, that are apparent in various contexts with various people (e.g., at home, at work, with family, with friends).

In order to facilitate the clinician's threshold rating, there are specific guidelines below each item which pertain to each personality disorder. If the clinician detects that the patient has not provided enough information in response to the questions outlined in the interview booklet to allow them to make a rating of either 1, 2, or 3 then the clinician can ask their own questions as long as they assess pathology, pervasiveness and persistence. For example, in order to assess pathology the clinician can ask the following questions: "give me the most extreme example", "do you think you are more this way than most people?", "does it bother other people?". To assess persistence the clinician can ask: "have you been this way for a long time?", "how often does it happen?" and to evaluate pervasiveness the clinician can ask the following questions: "does this happen in a lot of different situations?", "does this happen with a lot of different people?".

There are two or three questions which assess a personality disorder criterion for some of the SCID-II items. The questions are used by the clinician to probe the patient's responses. The first question for a criterion generally has a low threshold to maximize sensitivity;

subsequent questions are referred to as follow-up questions, and they are asked only if the patient's response to the first question is positive. The second question is usually a request for examples that will allow the clinician to determine whether the item is actually present at the threshold level. The authors of the SCID-II recommend that every question which pertains to each personality disorder be asked by the clinician in order to obtain a complete assessment of the patient's personality functioning. This recommendation was followed in the present investigation. The administration time of the SCID-II interview is approximately one hour. This time interval depends on whether the patient meets all criteria for the 11 personality disorders, and the degree of probing that the clinician has to use to rate the personality disorder criteria as present or absent.

When the SCID-II interview is complete, the clinician transfers the patient's score for each disorder onto the SCID-II summary score sheet. This score sheet also allows the interviewer to note the severity (e.g., mild, moderate, severe) during the past year of any personality disorder that is rated by the clinician to be at the threshold level. Scoring of the SCID-II can be performed either categorically or dimensionally. Categorical scoring was used in the present study. This means that the number of diagnostic criteria for each personality disorder for which the patient

met threshold are counted. In general only 5 out of 7 criteria scored pathologically are necessary for a diagnosis of a personality disorder.

Three months prior to the implementation of the present investigation, the experimenter was instructed on the SCID-II administration by a clinician. The instruction involved viewing a videotape of the SCID-II administration and scoring procedure. The guidelines of administration and scoring outlined on the videotape were then followed by the experimenter. The experimenter then practiced administering the SCID-II individually to 20 family members and friends, whose responses were audiotaped. The experimenter met weekly with a clinician who listened to the audiotapes and assessed the accuracy of the experimenter's rating of each criterion for each personality disorder. When the experimenter's ratings were comparable to those of the clinician's, the experimenter conducted 10 more SCID-II interviews. These interviews were used to examine the interrater reliability of the criterion ratings made by the experimenter. A colleague of the experimenter who was instructed on the SCID-II administration listened to the 10 audiotapes and rated the criteria which assessed each personality disorder. Interrater reliability was then calculated. Interrater reliability of 83% was obtained and maintained for 8 of the audiotaped interviews. In order to determine whether this percentage of interrater reliability

would be obtained in a patient population, 10 bulimic outpatients were administered the SCID-II interview and were audiotaped. When the interrater reliability was calculated it decreased to 80%. Although this percentage was somewhat lower than the interrater reliability for nonpatients, it was considered acceptable by the clinician and in accord with the literature (Hesselbrock et al., 1982).

The Computer Personality Disorder Interview (CPDI)

The CPDI was developed in order to simultaneously classify patients according to DSM-III-R criteria and to assess symptom severity by using a personality dimensional model. The interview consists of 160 items that can either be administered in a structured format by a Tandy 2800HD laptop computer or by an IBM computer. The CPDI assesses 10 DSM-III-R personality disorders such as (1) paranoid, (2) schizoid, (3) schizotypal, (4) borderline, (5) histrionic, (6) narcissistic, (7) avoidant, (8) dependent, (9) obsessive compulsive, and (10) passive aggressive (see Appendix B). The interview can be administered to the following participants: 1. the patient (CPDI-S) 2. a family member or friend of the patient (CPDI-Q) and 3. the clinician (CPDI-C). The average duration of the CPDI is 60 minutes. In order to address the research question of the present investigation, the patient and relative version of the CPDI was administered. Scoring of the participant's responses was performed automatically by the computer which used

preprogrammed diagnostic decision rules. Scoring of the CPDI was performed categorically.

The Family Environment Scale (FES)

Finally, both the patient and relative were asked to provide their perceptions of the patients' current family environment. The FES is a self-report questionnaire which measures subjects' perceptions of their conjugal or nuclear family environment. The FES consists of 90 True/False items and has 10 subscales that highlight 3 dimensions of family functioning such as: (a) relationships within the family, (b) directions of personal growth, and (c) system maintenance. Each dimension has a number of associated subscales. The relationship dimension consists of 3 subscales: cohesion, expressiveness and conflict. The directions of personal growth dimension consists of 5 subscales: independence, achievement orientation, intellectual-cultural orientation, active recreational orientation and moral-religious emphasis. The system maintenance dimension consists of 2 subscales: organization and control. Each of the FES subscales have 9 related items (e.g., statements). The FES is scored by obtaining a raw score for each of the 10 dimensions.

Subscale scores can be converted into standard scores, and profiles may be generated that display the standard scores. Normative data based on 1,125 normal and 500 distressed families are available for each of the FES

subscales. Reliability and validity of the FES have been established (Billings & Moos, 1982). The FES subscales have moderate to high internal consistency with values between .64 and .79, and have demonstrated adequate test-retest reliability yielding values between .68 and .86 over a two month period (Billings & Moos, 1982). The FES can be completed by the patient and their relative in 20 minutes and it is scored by computer.

Procedure

The experimenter contacted by telephone patients who previously received eating disorder treatment, explained the purpose of the study and inquired whether the patient had a first-degree relative (mother, father, sister, brother) or second-degree relative (spouse, defined as an individual who is related by marriage or who has been cohabiting (e.g., in a common law relationship) for at least 4 years) who would also be interested in participating in the study. If the patient indicated that a relative was interested, the experimenter discussed the study with the relative and addressed any questions which they had concerning the study. An appointment was then scheduled for the patient and their relative of choice to come to the clinic together.

Upon their arrival at the clinic, the bulimic patient and her relative were greeted by the experimenter who then escorted them to a testing room. The experimenter explained the purpose of the study and asked the bulimic patient and

her relative to read and sign individual informed consent forms (see Appendix C). The consent forms described the purpose of the study, the number of questionnaires and interviews to be administered and the duration of the session for the bulimic patient and her relative. The duration of the session for the bulimic patient was approximately 3 hours and 30 minutes, and for her relative one hour and 30 minutes.

After the consent forms were signed, the experimenter informed the bulimic patient and her relative that testing would be done individually. Testing was performed individually, in order to save time by administering the computer interview (CPDI-S) to the bulimic patient in Testing Room A and administering the computer interview (CPDI-Q) to their relative in Testing Room B. The patient and relative were also tested individually to reduce the likelihood of a discussion of their responses to the questionnaire and interview items which could bias the outcome of the study.

The experimenter then explained to both the patient and relative each questionnaire and interview that the patient would be administered during the session. The relative was then taken to the separate testing room.

The patient was left to complete the demographic questionnaire, the Beck Depression Inventory, the Personal and Family Medical History Questionnaire, and the Bulimic

Symptom Check List. The patient was asked to telephone the experimenter in the research laboratory after completion of these questionnaires. After the patient completed the BDI and the PFMHQ, the experimenter scored and examined them to determine if the patient met the inclusion criteria discussed above.

If the patient met the inclusion criteria she was left to self administer the PDQ-R. Once again the patient was asked to telephone the experimenter after completion of this questionnaire. The PDQ-R was immediately scored by the experimenter and the patient's personality disorder diagnoses were recorded on the SCID-II interview booklet. The experimenter then conducted the SCID-II interview. After the interview was completed, the experimenter asked the patient if she would like a 15 minute break before beginning the computer interview.

After this interval the CPDI-S was administered to the patient. The experimenter inquired whether the patient was familiar with computers and provided instructions if they were not. The patient was asked to respond to the questions asked by the computer interview by providing their perceptions of their personality. The experimenter observed the patient's progress on the first 5 questions in order to be assured that the patient understood the questions.

After the patient completed the CPDI-S, she was administered the FES. After completing the FES the patient

was administered a debriefing page. The experimenter addressed any questions which the patient asked about the study. The patient was then informed by the experimenter that if a need for psychological, psychiatric or eating disorder counselling developed, the patient should contact the experimenter who would provide information about obtaining these services.

The patient's relative was escorted to Testing Room B and each questionnaire and interview that the relative would be administered during the session was explained by the experimenter. The relative was then administered the demographic questionnaire, the BDI, and the PFMHQ. The relative was asked to telephone the experimenter in the research laboratory when they completed the questionnaires. The experimenter scored and examined the BDI and the PFMHQ in order to determine if the relative met the inclusion criteria for participation in the study. The relative was included in the study if they were not depressed, did not recently abuse substances and were not eating disordered. If either the relative or bulimic did not meet the inclusion criteria, they were informed that a criterion for participation in the present study was not met and that they both would be unable to further participate in the study.³

³Two pairs of subjects were excluded from further participation in the study when they did not meet these inclusion criteria. In both cases, the relative indicated moderate depression levels.

If the relative met the inclusion criteria they were then administered the CPDI-Q. The relative was asked to respond to the questions asked by the computer interview by providing their perceptions of their bulimic relative's personality. As with the patient, the experimenter provided computer instructions if necessary and observed the relative's progress on the first 5 questions, to assure that the relative understood them. After the relative completed the CPDI-Q, they were administered the FES. Finally, the debriefing page was administered. The experimenter addressed any questions which the relative asked about the study. The relative was then informed by the experimenter that if a need for either psychological or psychiatric counselling developed, the relative should contact the experimenter who would provide information about obtaining these services.

Results

Demographic Characteristics

To assess the comparability of the remitted and partially remitted bulimic groups on demographic variables independent t-tests were conducted. There were no differences between remitted ($\underline{M}$ =22.74, $\underline{SD}$ =16.28) and partially remitted ($\underline{M}$ =29.68, $\underline{SD}$ =18.92) bulimics in terms of time elapsed since treatment $t(36)=1.21$, ns. However, the remitted versus the partially remitted bulimic subjects exhibited significant differences in their average age

$t(36)=3.21$ $p<.003$, in that the remitted bulimics were younger ($M=24.79$, $SD=5.60$) than the partially remitted bulimics ($M=32.16$, $SD=8.30$). Independent t-tests for current weight, desired weight, and height were not significant at $p<.05$. Combined the bulimic group ($n=38$) had an average current weight of 157.12 lbs, a desired weight of 130.68 lbs and height of 5 ft, 5 in. Thus, although comparable in body image, the age differences suggest that there may be more long-term factors in the condition of the partially remitted bulimics.

Chi-square analyses for marital status, education, SES and recreational drug use for remitted and partially remitted bulimics were not significant at $p<.05$. While most of the sample were in common law relationships (55.3%), 26.3% were in their first marriage, 7.9% were divorced and had remarried and 10.5% were divorced but were in common law relationships. In terms of educational background, 15.8% had an elementary school education, 55.3% had a high school education, 26.3% had a college education, 10.5% had some post graduate education and 7.9% had completed a post graduate degree. The mean socioeconomic status for the bulimic group was 24 which falls within the range of scores specified by Hollingshead (1959) as Class 2 which is representative of managerial employees or middle class. A substantial proportion of bulimics indicated that they had used recreational drugs on a few occasions (57.9%), while

42.1% indicated that they never used recreational drugs.

The relatives ($n=38$) were also subdivided according to the status of the matched bulimic (remitted vs partially remitted). The relative groups did not differ in age, $t(36)=.18$, ns, averaging 35.53 years ($SD=12.41$). None of the relatives indicated that they had an eating disorder. Chi-square analyses for the relatives' relationship to bulimics was not significant at $p<.05$ indicating a similar number of mothers, sisters and spouses in remitted and partially remitted bulimics' group of relatives. This would suggest that any differences in perceptions that may occur between relative groups are not a function of the differential relationships to the bulimic.

Chi-square analyses for marital status, educational background, SES and recreational drug use for remitted and partially remitted bulimics' relative group were also not significant at $p<.05$. While most of the sample were in their first marriage (42.1%), 31.6% were in common law relationships, 15.8% were divorced and had not remarried, 5.3% were divorced and had remarried, 2.6% were widowed and had remarried and 2.6% were widowed but had not remarried. In terms of educational background, 7.9% had an elementary school education, 50% had a high school education, 21.1% had a college education, 7.9% had some post graduate education and 7.9% had completed a post graduate degree. The remainder (5.2%) did not provide information about their

educational background. The mean for socioeconomic status for the relative group was 24 which falls within the range of scores specified by Hollingshead (1959) as Class 2 which is representative of managerial employees or middle class.

Previous research indicates that alcohol abuse is prevalent among eating disordered patients and their relatives. Moreover, alcohol can alter moods and may influence the accuracy with which information is reported. A 2 (remitted vs. partially remitted bulimic) $\times$ 2 (bulimic vs. relative) mixed analysis of variance (ANOVA) was performed in order to examine the average number of alcoholic drinks/week. Bulimic status (remitted vs. partially remitted) was between subjects, while bulimic versus relative was a matched pairs variable. There were no significant effects on the average number of drinks/week at $p < .05$.⁴ The bulimic group averaged 1.79 alcoholic drinks/week. The relative group averaged 1.58 drinks/week. This would indicate that neither group displayed alcohol abuse.

Post Treatment Binge, Vomit and Purge Frequency

Three independent groups t-tests (remitted vs. partially remitted bulimic) were performed to assess eating disorder symptoms namely bingeing, vomiting and purging frequency. As expected, the remitted bulimics reported

⁴Partial η^2 ranged from .02 to .03 for main effects; $\eta^2 = .10$ for the interaction.

lower frequencies of bingeing $t(36)=5.87$, $p<.001$; $\eta^2=.48$, and vomiting $t(1,36)=2.58$, $p<.01$; $\eta^2=.16$. There were no significant difference between the groups for purging frequencies $t(36)=1.44$ ns; $\eta^2=.06$ (see Table 5). Thus, as expected, while the remitted bulimics did not display any of these symptoms, the partially remitted bulimics continued to display low levels of symptomatology. Partially remitted bulimics' binge eating frequency was slightly above the minimum DSM-III-R requirement (two binge eating episodes per week for at least three months) for the diagnosis of bulimia nervosa.

Insert Table 5 about here

Depression

A 2 (remitted vs. partially remitted bulimic) $\times$ 2 (bulimic vs. relative) mixed ANOVA was performed to examine levels of depression. The main effect for remitted versus the partially remitted groups was significant $F(1,36)=11.82$; partial $\eta^2=.25$, $p<.001$, as was the main effect for bulimics versus relatives $F(1,36)=17.36$, $p<.001$; partial $\eta^2=.33$. However, these main effects were qualified by a significant interaction $F(1,36)=7.18$, $p<.02$; partial $\eta^2=.17$. The simple effects of bulimic status conducted for the bulimics and their relatives indicated that the partially remitted bulimics were more depressed ($M=12.21$; $SD=6.16$) than the remitted bulimics ($M=5.63$; $SD=4.46$) $t(36)=3.77$, $p<.001$,

Table 5

Binging Vomiting and Purging Frequency for Remitted
Bulimics and Partially Remitted Bulimics

		Binge	Vomit	Purge
Remitted Bulimic	Mean	.00	.00	.00
	SD	.00	.00	.00
Partially Remitted Bulimic	Mean	3.00	2.00	.74
	SD	2.26	3.38	2.21

although there were no differences between the relatives of partially remitted ($M=5.42$; $SD=3.67$) and remitted bulimics ($M=4.16$; $SD=3.93$) $t(36)=1.02$, ns. The simple effects of bulimic versus relative at each level of remission further indicated that the remitted bulimics were not significantly more depressed than their relative $t(18)=1.16$, ns. In contrast, the partially remitted bulimics reported higher levels of depression than their relatives $t(18)=4.46$, $p<.001$. Thus, it appears that only the partially remitted bulimics reported mild levels of depression while the remaining groups had mean scores indicative of no clinical depression.

Personality Disorders

Diagnostic Concordance Between the CPDI, SCID-II and the PDQ-R

The degree of diagnostic agreement between the three personality disorder assessment instruments (e.g., CPDI, PDQ-R, SCID-II) that were administered to the bulimic group was examined. The average kappa value for each pair of instruments (e.g., CPDI vs. SCID-II; SCID-II vs. PDQ-R; CPDI vs. PDQ-R) was examined as well as the individual kappa values for the separate diagnoses made by the instruments. All of the instruments assessed paranoid, schizoid, schizotypal, borderline, histrionic, narcissistic, avoidant, dependent, obsessive-compulsive and passive-aggressive personality disorders.

The kappa coefficient (K, Cohen, 1959) is a

nonparametric measure of association which is used for dichotomous variables. Kappa is calculated for the variables which are situated in a 2x2 contingency table; variable A (scale 1) has 2 categories (e.g., disorder present vs disorder absent), and variable B (scale 2) also has 2 categories (e.g., disorder present vs. disorder absent). Agreement (K) is measured on the diagonal which is identified by the upper left cell (e.g., disorder present) and the bottom right cell (disorder absent) of a contingency table. Observed agreement is the actual agreement between variable A and variable B as indicated on the diagonal. Observed agreement is obtained by summing the values on the diagonal and then dividing by the total number of cases. Chance agreement is assessed by summing the value for the absence of the disorder with the value for the presence of the disorder and dividing by the total number of cases. A correction is then made for chance agreement by subtracting this from 1.

In the present investigation Kappa was calculated by the computer which used the following formula:

$$K = \frac{\text{observed agreement} - \text{chance agreement}}{1 - \text{chance agreement}}$$

The Kappa statistic ranges from -1 to +1. Kappa values that are below .40 indicate poor agreement; values from .40 to .75 indicate fair to good agreement; kappa values above .75 indicate excellent agreement beyond chance levels (Cohen,

1966). The diagnostic concordance yielded by the pairs of instruments for the 10 personality disorders are presented below. Kappa could not be computed for some disorders since there were fewer than five cases in one cell of the contingency table.

The kappa values obtained for the CPDI and the SCID-II diagnoses are presented in Table 6. The average kappa value for the CPDI and the SCID-II was .32. The personality disorders avoidant ($K=.50$), dependent ($K=.41$) obsessive-compulsive ($K=.60$) and paranoid ($K=.44$) were within the range of fair to good agreement. Poor diagnostic agreement was found between these instruments for schizoid, schizotypal, histrionic, narcissistic and passive-aggressive personality disorders ($K's < .40$).

Insert Table 6 about here

The average kappa value for the CPDI and the PDQ-R was .27. Most of the kappa values obtained for the CPDI and the PDQ-R diagnoses were below .40 (see Table 6). Only schizotypal personality disorder yielded a kappa value of greater than .40 ($K=.42$).

The average kappa value for the PDQ-R and the SCID-II was .28. The kappa values obtained for the PDQ-R and the SCID-II diagnoses were within the range of fair to good agreement for avoidant ($K=.51$), borderline ($K=.42$), obsessive-compulsive ($K=.53$) and passive-aggressive ($K=.54$)

Table 6

Diagnostic Correspondence Between the CPDI, PDQ-R and the
SCID-II Administered to Bulimics

Personality Versus Disorder	CPDI Versus SCID-II	CPDI Versus PDQ-R	SCID-II PDQ-R
Paranoid	.44*	.34	.33
Schizoid	-.04	.34	-.04
Schizotypal	.30	.42*	.10
Borderline	.42*	.34	.42*
Histrionic	.19	.15	.13
Narcissistic	-.04	-.08	-.05
Avoidant	.50*	.34	.51*
Dependent	.41*	.34	.36
Obsessive- Compulsive	.60*	.26	.53*
Passive- Aggressive	.37	.25	.54*
Average	.32	.27	.28

Note. *fair to good agreement range =.40 to .75
below .40=poor agreement
chance agreement close to 0

personality disorders. The diagnostic agreement between these instruments for the remaining personality disorders was below .40.

According to these results, there is poor agreement between the pairs of personality disorder instruments. Both CPDI and PDQ-R appear to have higher concordance with the SCID-II than with each other, particularly in terms of the number of disorders on which there was at least fair agreement. As expected, the CPDI and SCID-II yielded the highest average concordance. In terms of individual diagnoses, the CPDI versus the SCID-II yielded fair to good diagnostic agreement for slightly more personality disorders (5/10 disorders) than did the SCID-II versus the PDQ-R (4/10) and the CPDI versus the PDQ-R (1/10). Finally, it should be noted that the CPDI versus SCID-II and the SCID-II versus the PDQ-R yielded moderate agreement for borderline personality disorder which is frequently diagnosed among bulimics.

Whether the different assessment tools yielded different prevalence levels in diagnosing at least one personality disorder was also examined. The CPDI and the SCID-II yielded the same diagnostic prevalence for the diagnosis of at least one personality disorder (42.1%) while the PDQ-R yielded a higher diagnostic prevalence (76.3%), Cochran's $Q(2)=21.13$, $p<.001$. This replicates past research in which clinical interviews (given CPDI is based

on an interview format) were found to agree with each other more often than with questionnaires, and were less likely to indicate the presence of a personality disorder.

Insert Table 7 about here

A repeated measures ANOVA examining the average number of personality disorders indicated as present in each subject by the CPDI, SCID-II and the PDQ-R was significant $F(2,35)=23.24$, $p<.001$ partial $\eta^2=.30$. Follow-up comparisons indicated no difference between the CPDI ($M=1.21$, $SD=2.05$) and the SCID-II ($M=1.16$, $SD=1.81$), $t(37)=.17$, ns in the average number of personality disorders diagnosed, supporting the contention that the CPDI and the SCID-II were comparable in their diagnostic prevalence. In contrast the PDQ-R ($M=3.21$, $SD=2.86$) was more likely than the CPDI and SCID-II combined to indicate the presence of multiple disorders $t(37)=4.35$, $p<.001$.

The Perceptions and Prevalence of CPDI DSM-III-R Personality Disorders Among Bulimics

The CPDI DSM-III-R diagnosis of personality disorders were used for the remaining analyses because the CPDI is one of two personality disorder instruments that can be administered to the patient and the relative in order to examine diagnostic correspondence. Moreover, diagnosticians are interested in assessing the validity of computer administered instruments since they are beginning to gain recognition as assets to clinical practice and research.

Table 7

The Prevalence of CPDI, PDQ-R and SCID-II Personality Disorders

Personality Disorder	CPDI %Pres	SCID-II %Pres	PDQ-R %Pres
Paranoid	11	11	37
Schizoid	5	3	21
Schizotypal	24	5	24
Borderline	13	21	42
Histrionic	16	5	45
Narcissistic	5	3	13
Avoidant	16	24	47
Dependent	13	18	42
Obsessive-Compulsive	16	16	34
Passive-Aggressive	3	11	16
Presence of at least 1	42.1	42.1	76.3

Note. Pres=Present

Kappa coefficients were computed to examine the correspondence between the bulimic group and the perceptions of their relatives for the diagnosis of the CPDI personality disorders. Table 8 presents the kappa value for CPDI DSM-III-R diagnoses for the bulimic group and the perceptions of their relatives. The average kappa value between bulimics and relatives was only .23. Bulimics and their relatives

Insert Table 8 about here

demonstrated fair to good diagnostic agreement only for the schizoid, schizotypal, and avoidant personality disorders. This finding suggests that, in general, bulimics' perceptions of their own personality and their relatives' perceptions did not correspond well for the majority of the disorders assessed by the CPDI.

When the remitted and partially remitted bulimics were examined separately, the average kappa value between remitted bulimics and relatives was .43 (see Table 8). Diagnostic agreement between remitted bulimics and their relatives was excellent beyond chance levels for avoidant personality disorder, and was poor only on the paranoid and obsessive-compulsive dimensions. The average kappa value between partially remitted bulimics and relatives was only .12 (see Table 8). Diagnostic agreement between the partially remitted bulimic group and their relatives was below .40 for all examined personality disorders.

Table 8

Diagnostic Correspondence Between Bulimics and Relatives
For CPDI DSM-III-R Disorders

CPDI Personality Disorders	Diagnosis (Kappa)	Diagnosis (Kappa)	Diagnosis (Kappa)
	Total Sample	Remitted Bulimics	Partially Remitted Bulimics
Paranoid	-.09	-.12	-.05
Schizoid	.65*	.64*	-
Schizotypal	.48*	.68*	.27
Borderline	.21	.64*	.09
Histrionic	.31	.44*	.22
Narcissistic	.08	-	-.08
Avoidant	.54*	.77**	.34
Dependent	.16	.46*	-.09
Obsessive Compulsive	-.12	-.08	.22
Passive- Aggressive	.03	-	-
Average	.23	.43*	.12

Note. - indicates Kappa values could not be computed,
since less than 5 cases of a disorder were reported.

** excellent agreement beyond chance .75+;

*fair to good agreement range =.40 to .75;
below .40=poor agreement;
chance agreement close to 0.

Therefore it appears that diagnostic correspondence between the bulimic group overall and their relatives was generally poor. However, this appears to be particularly true when examining the diagnostic correspondence between partially remitted bulimics and their relatives, which was extremely poor. It is possible that the higher diagnostic agreement between remitted bulimics and relatives was due to reporting a lower prevalence of disorders overall. Therefore, the prevalence of CPDI DSM-III-R personality disorders diagnosed among the remitted and partially remitted bulimics based on their self-reports and relatives' perceptions were also examined (see Table 9). Chi-square

Insert Table 9 about here

analyses examining differences in the prevalence rates based on the reports of remitted versus partially remitted bulimics for each of the CPDI DSM-III-R personality disorders were all nonsignificant at $p < .05$.⁵ Reported prevalence rates between the remitted bulimics versus their relatives, and partially remitted bulimics versus their relatives on each of the CPDI dimensions were examined using Cochran's Q and also indicated no significant differences

⁵Past research has suggested that mothers may be less likely to describe their bulimic daughters as displaying personality disorders. However a Chi-square analysis examining differences in the prevalence rates based on the reports of mothers and spouses for the presence of at least one CPDI disorder was not significant at $p < .05$.

Table 9

The Prevalence of CPDI DSM-III-R Personality Disorders Among
Remitted and Partially Remitted Bulimics

Personality Disorders	Remitted Bulimics	Remitted Bulimics' Relatives	Partially Remitted Bulimics	Partially Remitted Bulimics' Relatives
	n=19	n=19	n=19	n=19
	%Pres	%Pres	%Pres	%Pres
Paranoid	10	10	10	5
Schizoid	10	-	6	-
Schizotypal	23	26	21	5
Borderline	5	21	10	10
Histrionic	10	21	10	10
Narcissistic	-	10	16	5
Avoidant	10	21	16	5
Dependent	5	21	16	5
Obsessive Compulsive	10	21	5	5
Passive - Aggressive	-	5	10	-

Note. Pres=Present

at $p < .05$. While there may have been no differences on the presence of specific disorders, it is possible that bulimics and their relatives may have differed in their perceptions of the presence of any disorder. Based on the bulimics' reports, the CPDI personality disorders were absent in 68.4% ($n=13$) of the remitted bulimics; while 10.5% ($n=2$) were diagnosed with 1 personality disorder, 21.1% ($n=4$) had 2 or more personality disorders, (a total of 31.6% ($n=6$) were diagnosed with the presence of a disorder). Personality disorders were reported as absent by 52.6% ($n=10$) of the partially remitted bulimics; 15.8% ($n=3$) indicated the presence of 1 personality disorder, 31.6% ($n=6$) had 2 or more personality disorders (a total of 47.4% ($n=9$) having at least 1 disorder). A chi-square analysis examining the prevalence in terms of the presence or absence of at least one disorder (to avoid low expected frequencies) for remitted bulimics vs. partially remitted bulimics was not significant at $p < .05$. Analyses examining prevalence of a disorder attributed to the bulimic by remitted bulimics versus relatives and partially remitted bulimics versus relatives were also not significant (Cochran's Q 's p 's $> .05$). The relatives of remitted bulimics perceived personality disorders to be absent in 63.2% ($n=12$) of the cases; 5.3% ($n=1$) perceived their relative to have only 1 personality disorder, 31.6% ($n=6$) indicated 2 or more personality disorders. Similarly, the relatives of

partially remitted bulimics perceived personality disorders to be absent among the majority of the sample 73.7% (n=14); 15.8% (n=3) were perceived to have 1 personality disorder, 10.6% (n=2) had 2 or more personality disorders.

A 2 (remitted vs. partially remitted bulimic) x 2 (bulimic vs. relative) mixed ANOVA was conducted on the number of personality disorders attributed to the bulimic. There were no significant main effects nor interactions at $p < .05$.

Perceptions of Family Environment

Ten 2 (remitted vs. partially remitted bulimic) x 2 (bulimic vs. relative) mixed ANOVAS were conducted to examine the reported perceptions of family environment for each of the FES variables cohesion, expression of feelings, conflict, independence, achievement-orientation, active-recreational orientation, intellectual-cultural orientation, moral-religious emphasis, organization and control.⁶ When each of the FES variables was examined, there were no significant main effects nor interactions at $p < .05$ (see Table 10).⁷ The FES subscale variables for bulimics and relatives are presented in Figure 1. Bulimics' and

⁶A multivariate analysis of variance (MANOVA) was not performed because of insufficient power.

⁷The main effects for bulimic status were not significant at $p < .05$ (partial η^2 ranged from .000 to .08). The main effects for group (bulimics vs relatives) were not significant (partial η^2 ranged from .00 to .006). The interactions between group and each FES variable were also not significant (partial η^2 ranged from .00 to .05).

relatives' perceptions of their family environment were generally low compared to the FES norms. However, all means were within one standard deviation unit of the norm.

Insert Table 10 about here

Insert Figure 1 about here

Similarly, three 2 (remitted vs. partially remitted bulimic) x 2 (bulimic vs. relative) mixed ANOVAS performed on each of the 3 dimensions of the FES familial relationships, directions of personal growth and system maintenance found no significant main effects nor interactions at $p < .05$ (see Table 11).⁸

Insert Table 11 about here

Personality Disorders and the Family Environment Scale

Given the low levels of depression in this sample and the lack of differences between remitted and partially remitted bulimics in family perceptions, it was not expected that a significant relationship would be found between depression and the FES variables. However, a stepwise multiple regression analysis in which depression scores for the bulimic group were regressed onto the three FES

⁸Due to previous differences found in mother's perceptions of family environment, ANOVAS examining differences between mothers and spouses on perceptions on the three FES dimensions were conducted. None of the effects was found to be significant at $p < .05$ (partial η^2 s ranged from .01 to .03).

Table 10

FES Subscale Scores for Bulimics and Relatives

FES	Remitted Bulimics		Remitted Bulimics' Relatives		Partially Remitted Bulimics		Partially Remitted Bulimics' Relatives	
	M	SD	M	SD	M	SD	M	SD
Cohes	40.62	18.65	47.67	17.00	44.06	16.46	45.08	16.41
Expr	40.57	17.90	47.81	16.08	40.15	16.46	46.13	14.15
Conf	49.81	12.94	42.63	10.76	47.40	12.79	45.97	15.77
Indep	42.67	14.38	47.94	11.31	50.39	11.71	50.64	11.17
Achor	49.68	15.65	45.32	13.11	49.49	12.88	45.91	13.86
Acrec	42.73	15.60	41.68	14.53	48.95	12.95	47.09	14.63
Inculor	41.46	14.81	43.29	10.67	44.43	13.66	46.07	11.68
Morem	46.56	10.34	48.68	8.00	47.30	12.34	49.75	11.18
Organ	47.80	14.28	45.67	12.62	47.77	11.41	46.43	10.48
Contr	51.72	17.79	45.65	12.62	49.81	14.73	51.23	11.44

Note.

Cohes=Cohesion; Expr=Expression of feelings; Conf=Conflict;
 Indep=Independence; Achor=Achievement Orientation;
 Acrec=Active-recreational orientation; Inculor=Intellectual-
 cultural orientation; Morem=Moral-religious emphasis;
 Organ=Organization; Contr=Control
 Scores less than 50 reflect more negative perceptions

Figure 1.

FES Subscale Scores for Bulimics and Relatives

Note.

Cohes= Cohesion; Expr= Expression of feelings; Conf= Conflict; Indep= Independence; Achor= Achievement-orientation; Acrec= Active-recreational-orientation; Inculcor= Intellectual-cultural orientation; Morem= Moral-religious emphasis; Organ= Organization; Contr= Control.

Table 11

FES Dimensions for Bulimics and Relatives

FES Dimen	Remitted Bulimics		Relatives		Partially Remitted Bulimics		Relatives	
	M	SD	M	SD	M	SD	M	SD
Relation	43.42	9.55	46.51	7.95	45.50	8.42	46.96	5.69
Pergrow	47.11	10.15	44.75	6.56	47.49	9.10	47.21	10.13
Sysmain	49.76	12.78	47.77	9.71	48.79	11.57	48.83	8.74

Note.

Dimen=dimensions; Relation=family relationships;
 Pergrow=directions of personal growth; sysmain= system
 maintenance.

dimensions was performed.⁹ The only dimension that entered the regression equation was the family relationships dimension $F(1,36)=4.12$, $p<.05$, $\beta=-.32$, $R^2_{adj}=.07$. This indicates that there was a small negative relationship between bulimics' perceptions of family relationships and depression, such that these relationships were viewed as less positive the more depressed the bulimic was.

Finally, to assess whether FES perceptions were affected by comorbid personality disorders, 2 (remitted vs. partially remitted) $\times$ 2 (personality disorder present vs. absent) ANOVAS on bulimics' perceptions on the 3 FES dimensions were performed. A significant main effect was found for the presence versus absence of a personality disorder on the family relationship dimension $F(1,34)=4.96$, $p<.03$; partial $\eta^2=.13$. This indicated that perceptions of family relationships were somewhat more negative for bulimics who had a personality disorder ($M=40.95$, $SD=7.63$) compared to those who did not ($M=46.74$, $SD=9.15$). There were no other significant differences.

⁹Due to the small sample size, multiple regression was not conducted with the 10 FES variables.

Discussion

Clinical theory and research links disturbed family relationships to the origin and maintenance of bulimia nervosa. Past research has found bulimic women compared to normal women perceive extremely negative family environments (Johnson & Flach, 1985). However, because the family environment has been primarily examined in terms of the self-reported perceptions of symptomatic bulimics, it is unclear whether the relationship between the negative reports and bulimia reflects a causal relationship in that the negative family environment precipitates the onset of bulimia or whether this environment reflects a response by the family system to having a bulimic family member. Alternatively, it is possible that the family environment is described as negative due to a perceptual bias on the part of the symptomatic bulimic as a function of comorbid depression and other personality disorders.

Perceptions of family environment were examined in the present study by administering the FES to bulimics who had received treatment for their eating disorder. Bulimics were further subdivided into remitted and partially remitted after treatment in order to determine whether bulimic symptomatology influenced their perceptions of their family environment. Previous research has demonstrated that an improvement in bulimic symptomatology co-occurs with a reduction in the number of personality disorders (Ames-

Frankel et al., 1992; Gwirtsman et al., 1983; Joffe, & Regan, 1988). Changes in the family environment reported by bulimics who have received treatment may be a function of perceptual changes due to low depression and few personality disorders, as opposed to reflecting real changes in the family environment. Because the clinical status of the bulimic may be confounded with these disorders to influence perceptions of their family environment, family members who did not display the bulimics' clinical condition also provided their perceptions of family environment.

If the bulimics' negative perceptions are accurate descriptions of the family environment, and the negative family environment is a precipitating factor in the bulimics' status, both groups of bulimics should report similarly negative perceptions of the family environment. Results of the present study did not find a significant difference in the perceptions of the family environment of remitted versus partially remitted bulimics. The nonsignificant findings of the present study may be due to insufficient power, although the small effect sizes do in fact suggest that no meaningful differences existed.

Although the remitted and partially remitted bulimics did not differ in their perceptions of the family environment, these perceptions were not in fact extremely negative. The means on all of the 10 subscales were within 1 standard deviation below the norm, and so could not be

regarded as significantly different from the norm. This finding was surprising given that it was expected that if the perceptions of the bulimics were similar, they would be similarly low (Johnson & Flach, 1985; Moos & Moos, 1986). Moreover, the perceptions of the bulimics were not significantly different from those of their relatives. This finding was also unexpected as they are not in accord with previous studies which report that bulimics and their parents differ significantly on their perceptions of family environment on most of the FES subscales (Humphrey, 1986a; Salkin, Burroughs, & Morrell, 1982; Stern et al., 1989; Strober, 1981). In these studies, while bulimics perceive their family environment to be extremely limited in cohesion, expression of feelings, organization and independence and very conflicted and controlling, their parents report less extreme negative views of the family environment. These past studies suggest that bulimics' perceptions of their family environment may be either due to bias stemming from their clinical condition or that the parents were biased in reporting information about their family environment.

It is possible that the family environment is implicated in the etiology of bulimia nervosa, but the family environments for subjects in the present study were not as negative as is usually found for this population. It may be that those bulimics who sought treatment from the

clinic to begin with come from more supportive family environments. Even more likely is the possibility that those who agreed to participate in conjunction with a relative came from more positive family environments. Indeed, many of the bulimic patients contacted were interested in participating in this study, however for the most part, their relatives were not. These relatives' disinterest may reflect a dysfunctional family environment. Moreover, some bulimic patients declined participation because their relatives were unaware of their eating disorder. Thus, the clinical sample used in this study may have affected the findings in that these subjects may have had better family environments than those who did not participate and therefore were not representative of the general population of bulimics.

It is also possible that the concurrence between bulimics and their relatives in the present study reflects a positive change in the family environment as a function of treatment per se that is accurately perceived by the bulimics. While the remitted and partially remitted bulimics differed significantly from each other in terms of symptomatology, it must be noted that the partially remitted bulimics reported relatively low levels of symptomatology; on average, the levels reported were just above the cut off criterion for DSM-III-R diagnosis of bulimia nervosa. Therefore, although pretreatment scores were not available

for analyses, both groups of bulimics may have improved substantially as a result of treatment. If so, they would both report more positive family environments, consistent with their relatives, if the family environment was responsive to the presence of the symptomatic bulimic member. Because there was no control group in this study (i.e., bulimics who sought but had not received treatment and their relatives), nor any available pretreatment measures there is no way to determine whether there were differences in family environment perceptions of the bulimics in the present study as a function of treatment.

A third possible explanation for the findings regarding perceptions of the family environment is that the extreme negativity usually reported by symptomatic bulimics is due to perceptual biases stemming from comorbid depression and personality disorders. Given that both groups of bulimics in the present study had received treatment, it would not be surprising if the partially remitted bulimics who were less successful in terms of relative outcome might display more serious personality disorders as well. The partially remitted group was significantly older than the remitted bulimics, suggesting the possibility of the involvement of more long-term factors. In the present study, the partially remitted bulimics were significantly more depressed (but only mildly) than the remitted bulimics (no clinical depression), but were no more likely than remitted bulimics

to present with a personality disorder. Note that while significant differences were present in these samples of bulimics, given the inclusion criteria that stipulated that only nondepressed remitted bulimics could participate, the extent of these differences cannot be generalized to remitted versus partially remitted bulimics as a whole. Given the relatively low levels of mood and personality disorders in the bulimics in the present study, any negative perceptual bias may also have been less evident resulting in no significant differences among bulimics or between the bulimics and their relatives. Support for this explanation comes from the examination of the relationship between depression and the personality disorders with the bulimics' perceptions of the family environment. Despite the restricted range, both depression and the presence of a disorder were found to be related to reporting more negative family environments, at least in terms of perceptions of family relationships. The findings of this study are in accord with those of Wonderlich and Swift (1990) who reported that eating disordered women (i.e., anorexics, bulimic-anorexics, bulimics) who were diagnosed with personality disorders or depression viewed their parental relationships more negatively. The use of a pre-post design, and the possibility of using a sample that is less restricted in its inclusion criteria may shed light on the relative influence of this bias in the bulimics' perceptions

of their family environment.

It is important to note that bulimics' negative perceptions of their family environment may not be solely due to their negative cognitive biases. It is possible that the more negative the bulimics' family environment, the greater the number of comorbid disorders and the greater the depression they may experience. In other words, differences in depressed and nondepressed bulimics' view of their family environment may be accurate, and should not be easily dismissed as stemming from negative cognitive biases per se.

In sum, the present study found no differences between remitted and partially remitted bulimics in their perceptions of their family environments, and both bulimic groups and their relatives reported similarly mildly negative environments. The pattern of findings do not singularly support any one of the hypothesized explanations regarding the role of bulimia nervosa in perceptions of family environment. The fact that bulimics' and their relatives' perceptions of family environment were similarly negative but not that extreme suggests a complex relationship between the potential sensitivity of the bulimic to a negative family environment and the possible effect of treatment on bulimics' family environments. However, given the relationship between depression and presence of personality disorders on perceptions of family environment, there also appears to be other cognitive biases

involved in the bulimics' perceptions.

An assessment of the extent to which bulimics' perceptions of their family environment are a function of biases due to personality disorders is contingent on the ability to accurately diagnose such disorders. The present study also examined the validity of three instruments used to assess personality. The importance of finding a reliable, valid and efficient instrument to diagnose personality disorders is of interest to clinicians generally. They indicate that the administration time of the traditional clinical interview is long because they are required to assess all areas of psychopathology. Moreover, clinicians' interpretation of the information provided by the patients may be biased. However using the method of self-report to diagnose personality disorders may also result in biased reports since patients can more easily withhold information or provide inaccurate information about themselves. A number of clinicians suggest that adapting the structured interview for administration by computers could be beneficial since the computer interview is both efficient and may reduce response bias by proceeding with questioning only after an appropriate response is made by the subject (Blouin, 1991; Car, Gosh, & Ancill, 1983; Ginsberg, 1993; Levitan, Blouin, Navarro, & Hill, 1991; Maultsby & Slack, 1971; Skinner & Allen, 1983; Slack, Hicks, Reed, & VanCura, 1966). Thus such a computer interview may

result in more honest and accurate reporting of information.

In the present study the Computer Personality Disorder Interview (CPDI), the Structured Clinical Interview for DSM-III-R Personality Disorders (SCID-II) and the Personality Disorder Questionnaire Revised (PDQ-R) were administered to bulimics in order to assess their personality. Comparisons were made between each of the formats in terms of diagnostic agreement and prevalence.

On average, diagnostic agreement between the pairs of instruments was poor. Although support was found for better diagnostic agreement between the CPDI and the SCID-II than between the CPDI and the PDQ-R or the SCID-II and the PDQ-R, on average diagnostic agreement was only slightly better. In terms of individual diagnoses, comparisons between the SCID-II and the CPDI yielded fair to good agreement for minimally more personality disorders (i.e., 5) than for comparisons between the CPDI versus PDQ-R (i.e., 1) and between the SCID-II and the PDQ-R (i.e., 4). Nevertheless, the number of dimensions along which agreement is poor was still substantial.

The CPDI versus the SCID-II and the SCID-II versus the PDQ-R yielded fair agreement for borderline personality disorder and moderate agreement for obsessive-compulsive, and avoidant personality disorders. Borderline and obsessive-compulsive personality disorders are frequently diagnosed among bulimics (Kennedy, McVey, & Katz, 1990;

Rybicki, Lepkowsky, & Arndt, 1989; Swift, Slotnick, & Goodman, 1990; Wonderlich, et al., 1990; Yagar, Landsverk, Edelstein, & Hyler, 1989).¹⁰ Because the instruments only yielded fair agreement for borderline personality disorder, the presence or absence of this disorder should be verified by a clinician on the basis of further independent information. The moderate agreement between the instruments for obsessive-compulsive and avoidant personality disorder suggests that either the CPDI, SCID-II or the PDQ-R can be interchanged for the diagnosis of these disorders among bulimics. In terms of the overall value of the instruments, the PDQ-R should not be substituted for structured interviews such as the CPDI or the SCID-II nor should one structured interview be used to replace the other for complete diagnostic assessment since clearly they may produce different outcomes. This is consistent with the conclusions of Hyler et al. (1990; 1992) who also found at best modest concordance between instruments. Thus it is important that future investigators be cautious when comparing their findings with studies that have used different instruments to diagnose personality disorders.

In terms of diagnostic prevalence, the CPDI and the

¹⁰Patients who are diagnosed with borderline personality disorder typically have a history of sexual abuse (Wooley, 1994). Bulimics who frequently receive a diagnosis of borderline personality disorder may also have a history of sexual abuse (Wooley, 1994). According to Wooley (1994), sexual abuse is involved in the etiology of eating disorders.

SCID-II were comparable while the PDQ-R yielded a higher diagnostic prevalence, and the highest diagnosis of multiple disorders. This finding indicates that the PDQ-R is more liberal than the CPDI and the SCID-II in making diagnoses. These findings replicate those of previous studies by Hyler et al. (1990), (1992). Hyler et al. (1990) found that the PDQ-R diagnosed more patients as having each of the personality disorders than did the PDE or the SCID-II which are both semi-structured interviews. The PDQ-R's tendency to over diagnose personality disorders may be due to its instructions for scoring. The PDQ-R uses an extremely rigid true/false scoring system to determine the presence or absence of personality disorders that may be highly susceptible to response bias (Hyler et al., 1990). Thus a flexible scoring system may be necessary in order to decrease the likelihood of overdiagnoses by this instrument.

Thus, the PDQ-R should be used with caution since it has a tendency to generate false positives. When the PDQ-R indicates that a disorder is absent it is likely absent, however when the instrument indicates the presence of a disorder it may be a false positive. Thus the PDQ-R may be useful as a screening device for the absence rather than the presence of personality disorders. If the PDQ-R indicates the presence of disorders, then alternative assessment strategies such as the SCID-II or the CPDI should be administered to verify these.

Because the average kappa values for the assessment methods were below .40 none of the methods appear to be valid for making diagnoses. The less than excellent diagnostic agreement between the instruments used in the present study indicates that it is necessary to further examine the measurement validity of instruments used to diagnose personality disorders. The low correspondence between the personality assessment instruments may be due to the patients' interpretation of the items. Because the instruments assess the same criterion with different questions, the patient may respond somewhat differently. If the various methods of personality assessment are comprised of items that were more similarly phrased, reliability and validity may be improved since patients' interpretation of the questions presented by all the methods would most likely be the same. However, differences may also be inherent to the kinds of biases that enter responses and interpretations given the context and availability of interpersonal cues.

Self-report questionnaires are only based on self-reports provided in a paper-and-pencil format whereas clinical interviews (e.g., SCID-II etc.) have an observation dimension which allows clinical judgement to be used in interpreting the patient's responses and behaviour, thereby resulting in poor agreement between interviews and self-report questionnaires. For example, the criterion for narcissistic personality disorder (i.e., lack of empathy;

inability to recognize and experience how others feel), requires that the clinician make a judgement as to the presence or absence of this criterion since the patient may not be aware of their behaviour to sufficiently report this themselves. When a semi-structured interview such as the SCID-II is administered to diagnose narcissistic personality disorder the clinician judges the presence or absence of the criterion for this disorder by asking the patient to provide examples of when people have criticized them for not being sympathetic or understanding. If the patient cannot provide examples the clinician then asks "when people tell you about their problems, do you "tune them out?" When a self-report questionnaire such as the PDQ-R is used to diagnose narcissistic personality disorder, the patient may not be aware of their unempathetic behaviour and thus may not accurately answer the questions which assess this disorder.

Similarly, it has been argued that although a computer administered interview may be beneficial, it cannot observe or monitor the patient's mannerisms, and tone of voice which are important in formulating diagnoses (Car et al., 1983; Mathisen, Evans, & Meyers, 1987; Maultsby & Slack, 1971; Skinner & Allen, 1983; Slack et al., 1966). Thus, while the computer interview can assist clinicians, it is not generally viewed as a replacement for them. Indeed, in the present study, agreement between the SCID-II and the other two formats that did not include the possibility for

observation was particularly low for schizotypal, schizoid, histrionic and narcissistic personality disorders (range for $k = -.04$ to $.19$). It may be that these disorders in particular are affected by the clinician's assessment of the patient's responses in conjunction with behavioural observations (e.g., for schizoid personality disorder, observations are made whether the patient displays constricted, affect and restricted emotions).

The CPDI and the PDQ-R do not involve observation thus good diagnostic agreement would be expected between them. In the present study, diagnostic agreement between the CPDI and the PDQ-R was poor for all disorders except schizotypal which only yielded fair agreement. It is possible that instruments that have an interactive format (e.g., CPDI and SCID-II) will agree well with each other for some disorders while a self-report questionnaire like the PDQ-R which is not interactive may not agree with instruments that are interactive. The interactive formats may lead to greater honesty in reporting information since patients do not want to be caught lying.

All of the instruments which assess personality disorders use self-report to a certain extent and are thus susceptible to response bias. Evidently, patients can withhold information or provide inaccurate information about themselves. The CPDI was expected to demonstrate a bias toward positive diagnosis since the computer interview

reduces respondents' ability to withhold information by forcing them to provide a response before continuing. The validity of diagnoses made by the CPDI may be enhanced due to the quality of information which it extracts from the patient. This would suggest that when the CPDI is administered to the patient and an informant that high diagnostic agreement between them should be obtained. Contrary to expectations, on average, agreement between bulimics and their relatives was poor. This outcome may be due to different perceptions of the personality of the bulimic, or to different bases for evaluating the bulimics' personality. The highest agreement between bulimics and relatives was obtained for schizoid personality disorder which requires a judgement based on observable behavioural symptoms. The lowest agreement was obtained between bulimics and relatives when judgements were required on only inferences about the presence or absence of a disorder (e.g., paranoid).

The good agreement between bulimics and relatives for disorders that have an observation component is similar to that of Herjanic and Reich (1982) who reported good agreement between mothers and children for observable, behavioural symptoms (i.e., social adjustment) and poor agreement was obtained when a judgement was required concerning either the presence or absence of the disorder (e.g., anxiety, depression, and obsessions).

The good diagnostic agreement between bulimics and relatives for schizoid personality disorder differs from the finding of poor diagnostic agreement across the three instruments (CPDI, SCID-II, PDQ-R), and particularly the CPDI and SCID-II, which allows for observation. This may be attributed to the relatives' familiarity with the bulimics' behaviour pertaining to this disorder in many contexts and the limited time during which the clinician had to judge the presence or absence of the disorder during the SCID-II interview.

Diagnostic agreement between bulimics and relatives was influenced by the clinical status of the bulimic. Agreement between remitted bulimics and relatives was high across most disorders. In contrast, it was extremely poor between partially remitted bulimics and their relatives. This outcome may have occurred for partially remitted bulimics due to a difference in prevalence levels. However, there was a relatively low prevalence of personality disorders reported by both remitted and partially remitted bulimics. Remitted bulimics and relatives demonstrated a similarity in perceptions of the prevalence of personality disorders among bulimics. However, partially remitted bulimics and their relatives were dissimilar in their diagnosis of these disorders. This difference appears to reflect less of an over-reporting bias on the part of the bulimic, given the equivalent relatively low rates of reporting for the

remitted and partially remitted bulimics, than an under reporting bias on the part of the partially remitted bulimics' relative. This may in part be due to inconsistencies surrounding unobservable symptoms. However, this should have an equivalent effect on the reports of both groups of bulimics' relatives' perceptions. Alternatively, it is possible that if the partially remitted bulimics did in fact have a more severe symptomatology to begin with, then any improvement was viewed over-positively by the relative (Humphrey, 1986a). This may result in an over-exaggerated view of the mental health of the partially remitted bulimic. Moreover, because the base rate of personality disorders in bulimics is not known the direction of the bias cannot be determined. A pre-post design would have allowed a more accurate assessment.

The lower prevalence of personality disorders reported by partially remitted bulimics' relatives may also be due to the relatives' denial of these disorders. Relatives may have a vested interest in perceiving the partially remitted bulimic as healthier than she is in order to deny the need to respond to symptomatology. Thus, relatives may have their own biases.

According to the literature, sexual abuse by family members is yet another factor which is involved in the etiology of eating disorders, although family members often deny the abuse and blame the victim (Wooley, 1994). A woman

who is sexually abused may consume large quantities of high caloric food in order to comfort herself. The food is purged in order to alleviate the stress and negativity associated with the abuse (Wooley, 1994).

Taken together the results of this study indicate that informant reports could be used to verify personality disorders which have an observation component. In particular, informant reports may be beneficial in circumstances in which the patient may not be honest in reporting information about themselves. The patient may deny their behaviour or may view their behaviour in a particular way. However, clearly consideration must be given to factors that may lead to cognitive or reporting biases on the part of both the patient and the informant before the decision to rely on the informant's responses is made.

In conclusion, bulimics' mildly negative perceptions of their family environment were not merely a negative perceptual bias stemming from comorbid disorders. While depression and the presence of a personality disorder were related to bulimics' reports of a negative family environment, in terms of perceptions of family relationships the bulimics' perceptions were corroborated by the relatives' similarly mildly negative perceptions of family environment. However, while mildly negative, the characterization of the family environment reported by

bulimics was within a normal range suggesting that it is possible that the environment was responsive to the bulimics' clinical status. More specifically, the treatment which bulimics received may have been responsible for an improvement in their symptomatology, low levels of depression, and few personality disorders, along with changes in the family environment. It is also possible that treatment caused bulimics to develop a positive illusory perception of their family environment consistent with the perceptual bias displayed by nondepressed individuals because, similar to their relatives, their relatively nondepressed state resulted in a greater focus on the positive rather than negative dimensions of the environment (cf. Taylor & Brown, 1988 for a review).

Taken together, the outcome of this study suggests that although a complex combination of factors may be involved in bulimics' perceptions of their family environment particularly when bulimics receive treatment, the role of the family in the etiology of bulimia nervosa is unclear.

The outcomes of this study are somewhat generalizable to other eating disorder patients, to the extent that similar dynamics in the role of family and the occurrence of comorbid personality disorders are implicated. For example, anorexics who also have co-occurring depression and personality disorders, also report more negative perceptions of their family environment when depression and personality

disorders are present than when they are absent. However compared to bulimics, anorexics may have different views of their family environment. Past research has found that anorexics frequently report low expressiveness within their family environment (Garfinkel et al., 1983). The degree to which depression and personality disorders may bias anorexics' perceptions of expressiveness is unclear since research which addresses this issue is limited.

From a prevention perspective, families need to be aware of how family dynamics as well as sexual abuse by family members may contribute to the development of eating disorders. This could be accomplished through the development of workshops, seminars and support groups. The finding of a somewhat more negative perception of family environment, in direct association with the presence of depression and personality disorders, suggests that the clinician should address these disorders to reduce any negative biases that may exist in the perceptions of the family and therefore may feed into a self-fulfilling cycle. However, if these perceptions are comorbid exacerbations of an environment that is in reality negative and is implicated in the onset of bulimia nervosa, then clearly the application of family counselling along with the treatment of bulimia nervosa may also be called for, particularly if that environment is also in part a dysfunctional reaction to the bulimic member. The benefits which eating disorder

treatment provides bulimics in terms of less severe symptomatology, less severe depression and the manifestation of fewer personality disorders could possibly be maintained by family counselling directed at improving family dynamics between bulimics and their relatives. By following eating disorder treatment with family counselling, the prognosis of bulimic patients may be enhanced. The possibility of a relapse may be unavoidable if they return to a family environment that has not been responsive to improvement in the bulimics' clinical status.

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Appendices

Appendix A

The Biological Basis of Bulimia Nervosa

Research has demonstrated that the hypothalamus functions in the control of the autonomic nervous system, reflex integration, control of the endocrine system and in the organization of feeding behaviour (Fairburn & Wilson, 1993). Within the ventral hypothalamus there are two regions which pertain to eating behaviour: a satiety centre in the ventromedial hypothalamus and a feeding centre in the lateral hypothalamus.

Many brain neurotransmitters such as norepinephrine, serotonin, dopamine, opioid peptides, gamma-aminobutyric acid (GABA), as well as pancreatic polypeptides are connected with the regulation of food intake (Bolo, 1993). Because a review of all of the brain transmitters associated with food intake is beyond the scope of this review, only the neurotransmitters which pertain to bulimia nervosa will be addressed, including monoamines (e.g., norepinephrine, serotonin, dopamine) and opioid peptides.

Norepinephrine, serotonin, and dopamine pathways pass through the hypothalamus. The serotonergic pathway, which originates in the raphe nuclei of the pontine-midbrain area runs through the ventromedial centre (e.g., the satiety centre). Adrenergic pathways run through the perifornical area which is adjacent to the ventromedial hypothalamus. The adrenergic pathways project into the lateral

hypothalamus (the feeding centre) (Fairburn & Wilson, 1993). The dopaminergic pathway referred to as the nigrostriatal tract is also involved in feeding behaviour. Opiate receptors for endogenous opioid peptides exist on dopaminergic neurons in the nigrostriatal tract (Bolo, 1993). The release of norepinephrine, serotonin, and dopamine in the lateral hypothalamus inhibits feeding. However, in the ventromedial hypothalamus the release of serotonin produces satiety and decreased eating, while a reduction in the production of serotonin results in hyperphagia and obesity. The release of norepinephrine in the ventromedial hypothalamus leads to increased eating (Fairburn & Wilson, 1993).

Endogenous opioid peptides in the hypothalamus contribute to the overall drive to eat. This is supported by studies which have administered naloxone (an opiate antagonist) which reduces feeding behaviour in obese individuals (Bolo, 1993). Opiate receptors are located on dopaminergic neurons in the nigrostriatal tract that are stimulatory to feeding behaviour. The opiate receptors in the brain are referred to as mu, delta, and kappa. Of the three receptors, the kappa receptor is believed to be extremely significant in the regulation of feeding (Bolo, 1993).

The Effect of Tricyclic Antidepressants on Bulimia

Evidence that brain centres involved in food regulation

are involved in bulimia is derived from studies which have administered medication trials to bulimic individuals in order to examine changes in their bulimic symptomatology. There have been a number of double-blind placebo-controlled trials during which tricyclic antidepressants have been administered to bulimics (Agras, Dorian, Kirkley, Arnow, & Bachman, 1987 imipramine; Pope, Hudson, Jonas, & Yurgelun-Todd, 1983 imipramine; Barlow, Blouin, Blouin & Perez, 1988 desipramine; Hudson, Pope, Jonas, & Yurgelun-Todd, 1983; Hughes, Wells, Cunningham, & Ilstrup, 1986 desipramine).

Pope et al. (1983) administered 200mg of imipramine to 11 bulimics on a daily basis for six weeks. Eleven more bulimics were administered a placebo daily for the same number of weeks. These authors reported a 70 percent decline in binge frequency in the bulimic group which received imipramine; 35 percent of subjects in this group abstained from bingeing. There was no change in binge eating behaviour in the bulimic group which received the placebo (Pope et al., 1983). Specifically, imipramine was associated with decreased intensity of binges, decreased preoccupation with food, greater subjective global improvement, and significantly reduced Hamilton rating scale scores of depression (Pope et al., 1983). Pope et al. (1983) concluded that the beneficial effect of imipramine in reducing subjects' bulimic symptomatology was due to its antidepressant action, rather than to its antibulimic

property since a decrease in the Hamilton rating scale scores correlated significantly with a reduction in subjects' binge eating behaviour. The beneficial effect of imipramine was also noted by Agras et al. (1987) who administered 300mg/day of imipramine among 22 bulimics for 16 weeks. Unlike Pope et al. (1983), Agras et al. (1987), found that bulimic subjects responded more slowly to imipramine. According to Agras et al. (1987), imipramine reduced subjects' binge eating frequency by 29 percent, in contrast to the 70 percent reduction reported by Pope et al. (1983). Nonetheless, Agras et al. (1987) reported that by the end of 16 weeks, subjects' binge eating frequency reduction improved by 72 percent. At 16 weeks Agras et al. (1987) found that bulimics abstained entirely from bingeing. In contrast to Pope et al. (1983), Agras et al. (1987) found no correlation between improvement in depression and improvement in bulimic symptomatology. In fact, a number of subjects who exhibited no evidence of depression showed a substantial improvement in their bulimic symptomatology when administered imipramine (Agras et al., 1987). Agras et al. (1987) concluded that any correlation between decreased bingeing and improvement in mood may indicate that depression diminishes in response to normal eating behaviour.

In contrast to the results of Pope et al. (1983) and Agras et al. (1987), Mitchell and Groat (1984) did not find a significant difference in bingeing reduction frequency

between 16 bulimics who received 150mg/day of amitriptyline for eight weeks and 16 controls who received placebo. An interesting outcome of this study was the marked improvement in the bulimic symptoms of subjects in the amitriptyline group and also by subjects in the placebo group, though there was a nonstatistically significant trend toward better response with amitriptyline (Mitchell & Groat, 1984). Specifically, the results indicated that bulimics who received amitriptyline had a 72.1 percent reduction in binges per week; while bulimics who received placebo had a 51.8 percent reduction. This finding was attributed to inadequate dosages of amitriptyline and also to the high levels of subject motivation, since the type of subjects used consisted of those who presented for treatment (Bolo, 1993).

When the subjects were divided into depressed and nondepressed, Mitchell and Groat (1984) found that there was less improvement of bulimic symptomatology in the depressed bulimic group whether treated with placebo or amitriptyline. Amitriptyline had a significant antidepressant effect among the depressed bulimic subjects (Mitchell & Groat, 1984). In a double-blind placebo controlled cross-over study conducted by Hughes, et al. (1986), 200mg/day of desipramine was administered among 22 nondepressed bulimics for six weeks. Hughes et al. (1986) found a 91% mean reduction in binge frequency at the end of the sixth week. These authors

concluded that since depressed bulimic subjects were excluded from the study, the influential effect of desipramine on bulimic symptomatology was separate from the antidepressant property of the drug.

In another double-blind placebo-controlled crossover study by Barlow, Blouin, Blouin, and Perez (1988), 150mg/day of desipramine was administered among 24 depressed and nondepressed bulimics for six weeks. According to the results, desipramine, compared to placebo, effectively reduced subjects' bingeing and purging behaviour. However, the clinical effects of desipramine were only modest (Barlow et al., 1988). A significant improvement in subjects' bingeing and purging frequency occurred at one week when desipramine was administered, while the maximum decrease in bingeing and purging frequency occurred at the end of the sixth week (Barlow et al., 1988). Serum desipramine levels revealed that 75 percent of the subjects tested to have levels below the range (125-275 ng/ml) generally accepted for the treatment of depression (Barlow et al., 1988). Furthermore, according to the results, desipramine did not result in any significant improvement in subjects' depressive symptoms. Based on desipramine's rapid beneficial effect on subjects' bingeing and purging behaviour at one week, and also on desipramine's minimal effect in influencing subjects' depression, as well as the effectiveness of desipramine at subtherapeutic levels,

Barlow et al. (1988) concluded that desipramine has an antibulimic effect which is independent of its antidepressive property. Finally, these authors postulated that the antibulimic effect of desipramine may be mediated through an increase in norepinephrine activity, since desipramine is a specific norepinephrine reuptake inhibitor (Barlow, et al., 1988). Norepinephrine is inhibitory in the feeding centre of the lateral hypothalamus, and evidently reduces hunger (Bolo, 1993).

Kennedy, Piran, Warsh, Prendergast, Mainprize, Whynot, and Garfinkel (1988) administered 60 mg/day of the monoamine oxidase (MAO) inhibitor isocarboxazid among 24 bulimic subjects for six weeks in a double-blind placebo-crossover study. The results indicated that of subjects administered isocarboxazid initially, all experienced a more than 50 percent decrease in vomiting and a 50 percent reduction in bingeing. Thirty-three percent of the bulimics abstained from bingeing; while 39 percent abstained from vomiting. The authors found no correlation between improvement in bulimic and depressive symptoms. The failure to find this correlation supports an antibulimic effect independent of the antidepressant effect of isocarboxazid (Kennedy, et al., 1988). Kennedy et al. (1988) accounted for their results by suggesting that MAO inhibition alters noradrenergic and serotonergic activity in the hypothalamic centres regulating feeding behaviour. According to Kennedy et al. (1988), this

accounts for the antibulimic property of isocarboxazid.

Taken together the results of studies which have administered antidepressants to bulimic subjects suggest that these drugs may operate through an antibulimic property which is separate from their mood-stabilizing effect.

Neurotransmitter Control of Appetite: Opiate Antagonists Naloxone and Naltrexone

Mitchell, Laine, Morley, and Levine (1987) performed a double-blind placebo controlled trial in which naloxone was administered to five normal weight bulimics who were hospitalized. Naloxone was administered intravenously prior to a daily binge schedule. According to the results, the number of kilocalories consumed per binge was significantly reduced by naloxone compared to the placebo. These authors indicated that naloxone reduced the number of kilocalories, because it is a weak antagonist to the kappa receptor which is believed to be significant in the regulation of feeding behaviour. They suggested that an opiate antagonist such as naltrexone with greater specificity for the kappa receptor may have further decreased patients' binge eating behaviour (Bolo, 1993). This was demonstrated in a study performed by Jonas and Gold (1987).

The Serotonin Agonist: Fenfluramine

Recently, attention has been focused on the theory that bulimic behaviour is the result of a hyposerotonergic state (a state of decreased satiety). Evidence for this is supported by a number of studies performed on animal

subjects (cf. Goldbloom, 1987, for a review). However according to Bolo (1993), evidence for this is limited and difficult to obtain in human subjects. Nonetheless, Kaye, Ebert, Gwietsman, and Weiss (1984) found evidence for low levels of the serotonin metabolite 5-hydroxyindolacetic acid (5-HIAA) in the cerebrospinal fluid (CSF) of weight-recovered bulimic anorectics. Specifically, Kaye et al. (1984) measured the CSF of 11 bulimic-anorexic patients and 5 anorexic patients. The anorexics had lost weight by restricting their food intake; while the bulimic-anorexics restricted their food intake and also binged and purged. Kaye et al. (1984) found no significant difference in CSF 5-HIAA levels between bulimic-anorexics and anorexics prior to restoration of their normal weight. Following the weight restoration, bulimic-anorexics had lower CSF 5-HIAA levels than the anorexic group. This indicates that bulimic-anorexics exhibited lower serotonin activity than anorexics. According to Goldbloom (1987), the failure of CSF 5-HIAA and therefore serotonin activity to return to normal levels in bulimic-anorexics after weight recovery suggests that a hyposerotonergic state may perpetuate bingeing in even normal weight bulimics. CSF 5-HIAA concentration is believed to reflect the level of serotonin activity/metabolism in the central nervous system, since 5-HIAA is the principal metabolite of serotonin (Bolo, 1993).

Dextrofenfluramine is a well known appetite suppressant

which operates by increasing presynaptic serotonin release and inhibits its reuptake. Robinson, Checkley and Russell (1985) investigated fenfluramine's effect on subjects' binge eating behaviour. By using double blind placebo-controlled conditions, these authors administered 60 mg of fenfluramine orally to 15 hospitalized bulimics. Two hours after they were administered fenfluramine, the subjects were provided food on which they could binge. Robinson et al. (1985) found that the amount of food consumed was significantly less following the administration of fenfluramine and was correlated with fenfluramine serum levels. According to Blouin, Perez, Bushnik, Zuro and Mulder (1988), the quick onset of diminished binging in Robinson's study suggests that fenfluramine operates by producing satiety.

Blouin et al. (1988) performed a double-blind placebo-controlled crossover study among 22 bulimic subjects. Subjects were administered either 60 mg of fenfluramine or 150mg of desipramine daily for six-weeks. These authors found that fenfluramine significantly reduced subjects' vomiting behaviour one day after the first administration. This beneficial effect was maintained throughout the trial (Blouin et al., 1988). The results further indicated that desipramine was beneficial within the first week of treatment. This indicates that desipramine has an antibulimic effect which is independent of its antidepressant property (Blouin et al., 1988).

Taken together, the results of the above studies indicate that the administration of medications such as noradrenergic and serotonergic antidepressants and opiate antagonists have a beneficial effect on subjects' bingeing and purging behaviour by altering the noradrenergic, serotonergic and endogenous opioid systems within the hypothalamus.

Appendix B**Descriptions of DSM-III-R Personality Disorders**

1. **Paranoid personality disorder**
A pattern of distrust and suspiciousness such that others' motives are interpreted as malevolent
2. **Schizoid personality disorder**
A pattern of detachment from social relationships and a restricted range of emotional expression
3. **Schizotypal personality disorder**
A pattern of acute discomfort in close relationships, cognitive or perceptual distortions, and eccentricities of behaviour
4. **Borderline personality disorder**
A pattern of instability in interpersonal relationships, self-image, and affects, and marked impulsivity
5. **Histrionic personality disorder**
A pattern of excessive emotionality and attention seeking
6. **Narcissistic personality disorder**
A pattern of grandiosity, need for admiration, and lack of empathy
7. **Avoidant personality disorder**
A pattern of social inhibition, feelings of inadequacy and hypersensitivity to negative evaluation
8. **Dependent personality disorder**
A pattern of submissive and clinging behaviour related to an excessive need to be taken care of
9. **Obsessive Compulsive personality disorder**
A pattern of preoccupation with orderliness, perfectionism, and control
10. **Passive-Aggressive personality disorder**
A pattern of passive resistance to demands for adequate social and occupational performance

Appendix C

Questionnaires and Interviews Administered in the Present Investigation

1. Informed Consent Forms for Bulimics
2. Informed Consent Form for Relatives
3. Bulimics' Demographics and Identifying Information (BDII)
4. Relatives' Demographics and Identifying Information (RDII)
5. The Personal and Family Medical History Questionnaire (PFMHQ)
6. The Bulimic Symptom Check List (BSC)
7. The Beck Depression Inventory (BDI)
8. The Personality Diagnostic Questionnaire Revised (PDQ-R)
9. The Structured Clinical Interview for DSM-III-R Personality Disorders (SCID-II)
10. The Computer Personality Disorder Interview (CPDI)
11. The Family Environment Scale (FES)
12. Debriefing Form

Note. Permission was obtained from the authors of the Personality Disorder Questionnaire Revised (PDQ-R, Hyler & Reider, 1984; New York State Psychiatric Institute) and the Structured Clinical Interview for DSM-III-R Personality Disorders (SCID-II, Spitzer, Gibbon & First, 1990; Washington, DC: American Psychiatric Press) to include these instruments in Appendix C of this thesis.

**Ottawa
Civic Hospital**

1053 Carling Ave..
Ottawa, Ontario
Canada K1Y 4E9
(613) 761-4000

RECEIVED JAN 30 1995

**Title of Research: The Role of Personality
Dysfunction in Determining Perceptions of Family
Environment in Bulimia Nervosa**

**Faculty Sponsor Dr. Arthur Blouin 761-4746
Principal Investigator Judy Niles 761-3746**

Informed Consent

This study is being conducted in order to examine the extent to which bulimic women and a first-degree relative (e.g., either mother, father, sibling, or spouse) agree on their perceptions of family environment and personality problems. Obtaining perceptions of family environment is important because insight can be obtained about family dynamics which influence family members' behaviour, personality and mental health.

Since I have been assessed for an eating disorder and have completed psychoeducational group counselling at the Eating Disorder Clinic of the Ottawa Civic Hospital, I am asked to participate in this research project. My participation in this project means that I will be asked to complete 5 paper and pencil questionnaires, and 2 interviews (a computerized interview and an interview conducted by an investigator of this research project). One of the questionnaires will inquire about my family environment, another will inquire about my mood and one more will inquire about my personal and family medical history. Two questionnaires will inquire about my personality. The computerized interview will ask me questions about my thoughts, feelings and behaviours. The interview conducted by an investigator of this project will further inquire about my personality. I understand that the questionnaires and interviews will be completed on one occasion the duration of which will be 3 hours and 30 minutes.

I consent to having the information which I provide on the questionnaires and during the interviews included in this research project. This information will be grouped with information from other people who have completed the same questionnaires and interviews. I understand that some of the questions that I will be asked during the interviews and on the questionnaires are sensitive. I understand that I have the right to refrain from answering any of the questions.

I understand that my identity will be kept strictly confidential. All information either in computer files or any other files will include code numbers and no other identifying information. Access to the research file will be limited to the investigators listed at the top of this page.

The information which I provide on the questionnaires and interviews will be kept confidential.

There will be no direct benefits to me for participating in this research project and there are no known risks associated with completing the questionnaires and interviews.

The results of this research project may be published in academic journals or presented at conferences but my identity and my relative's identity will remain strictly confidential.

I may discuss this study with the investigators and I can continue to obtain information about the study after my participation.

If during the course of this study, I feel that I have need of psychological or psychiatric counselling, I may contact the project investigators who will provide me with information about obtaining these services.

I give my permission to the principal investigator to ask my first-degree relative (who is aware of my eating disorder) to participate in this project.

The information which I provide on the questionnaires and during the interviews will be kept confidential, and will not be discussed with my relative.

I may have a copy of this consent form.

Name _____

Signature _____

Date _____

Investigator _____

(Valid until January 19, 1996)

RECEIVED JAN 30 1995

Title of Research: The Role of Personality
Dysfunction in Determining Perceptions of Family
Environment in Bulimia Nervosa

Ottawa
Civic Hospital

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Faculty Sponsor Dr. Arthur Blouin 761-4746
Principal Investigator Judy Niles 761-3746

Informed Consent

This study is being conducted in order to examine the extent to which bulimic women and a first-degree relative (e.g., either mother, father, sibling, or spouse) agree on their perceptions of family environment and personality problems. Obtaining perceptions of family environment is important because insight can be obtained about family dynamics which influence family members' behaviour, personality and mental health.

As a relative of an individual who has been assessed for an eating disorder, and who has completed psychoeducational group counselling at the Eating Disorder Clinic of the Ottawa Civic Hospital, I am asked to participate in this research project. My participation in this project means that I will be asked to complete 3 questionnaires and a computer interview. One questionnaire will inquire about my mood, another will inquire about my personal and family medical history and one more questionnaire will inquire about my family environment. The computerized interview will ask me questions about my relative's thoughts, feelings and behaviours. I understand that the questionnaires and interview will be completed on one occasion the duration of which will be one hour and 30 minutes.

I consent to having information which I provide on the questionnaires and during the interview included in this research project. This information will be grouped with information from other people who have completed the same questionnaires and interview. I understand that some of the questions that I will be asked during the interview and on the questionnaires are sensitive. I understand that I have the right to refrain from answering any of the questions.

I understand that my identity will be kept strictly confidential. All information either in computer files or any other files will include code numbers and no other identifying information. Access to the research file will be limited to the investigators listed at the top of this page.

The information which I provide on the questionnaires and interview will be kept confidential.

There will be no direct benefits to me for participating in this research project and there are no known risks associated with completing the questionnaires and interview.

The results of this research project may be published in academic journals or presented at conferences, but my identity and my relative's identity will remain strictly confidential.

I may discuss this study with the investigators and I can continue to obtain information about the study after my participation.

If during the course of this study, I feel that I have need of psychological or psychiatric counselling, I may contact the project investigators who will provide me with information about obtaining these services.

The information which I provide on the questionnaires and during the interview will be kept confidential, and will not be discussed with my relative.

I may have a copy of this consent form.

Name _____

Signature _____

Date _____

Investigator _____

IDENTIFYING AND DEMOGRAPHIC INFORMATION

Name _____

Sex: ☐ Male ☐ Female Age: _____
Race: ☐ White ☐ Black Other (Specify) _____

Marital Status:

- ☐ Presently in first marriage ☐ Widowed and presently remarried
☐ Divorced and presently remarried ☐ Widowed and not presently remarried
☐ Divorced or separated and not presently married ☐ Never married

What is your present primary role?

- ☐ Wage earner ☐ Housewife ☐ Student ☐ Other (Specify) _____

Highest Occupational level attained

Check one

- Higher executive, proprietor of large concern, major professional* ☐
Business manager of large concern, proprietor of medium-sized business, lesser professional ☐
Administrative personnel, owner of small independent business, minor professional, owner of large farm ☐
Clerical or sales worker, technician, owner of little business, owner of medium-sized farm ☐
Skilled manual employee, owner of small business ☐
Machine operator, semiskilled employee, tenant farmer who owns little equipment ☐
Unskilled employee, sharecropper ☐
Does not apply (Never worked in paid employment) ☐
Does not apply (No spouse) ☐
Information not available ☐

Current living arrangement:

- ☐ With parents or relatives ☐ Dorm or shared apartment with friends
- ☐ Conjugal (intimate relationship with other person, including spouse, boyfriend, etc.)
- ☐ Alone

Highest Level of Education

Check One

- Completed post-graduate training ☐
- Some post-graduate training ☐
- Completed college, received four year academic degree ☐
- Completed high school, may have attended or completed trade school or non-academic training requiring high school completion ☐
- Attended high school ☐
- Completed grammar school (8th grade) ☐
- Attended grammar school ☐
- No schooling ☐
- Does not apply (No spouse) ☐
- Information not available (specify why) ☐
- Please describe your current occupation _____
- _____
- _____

WEIGHT HISTORY

Current weight _____ lbs.

Current height _____ inches

Desired weight _____ lbs.

Adult Years

Highest adult weight since age 18 _____ lbs. at age _____

Lowest adult weight since age 18 _____ lbs. at age _____

How long did you remain at your lowest adult weight? _____ days

_____ months

_____ years

IDENTIFYING AND DEMOGRAPHIC INFORMATION FOR FIRST-DEGREE RELATIVES

Name _____

Sex: ☐ Male ☐ Female Age: _____
 Race: ☐ White ☐ Black Other (Specify) _____

Marital Status:

☐ Presently in first marriage ☐ Widowed and presently remarried
☐ Divorced and presently remarried ☐ Widowed and not presently remarried
☐ Divorced or separated and not presently married ☐ Never married

What is your present primary role?

☐ Wage earner ☐ Housewife ☐ Student ☐ Other (Specify)

Highest Occupational level attained Check one

<i>Higher executive, proprietor of large concern, major professional</i>	☐
<i>Business manager of large concern, proprietor of medium-sized business, lesser professional</i>	☐
<i>Administrative personnel, owner of small independent business, minor professional, owner of large farm</i>	☐
<i>Clerical or sales worker, technician, owner of little business, owner of medium-sized farm</i>	☐
<i>Skilled manual employee, owner of small business</i>	☐
<i>Machine operator, semiskilled employee, tenant farmer who owns little equipment</i>	☐
<i>Unskilled employee, sharecropper</i>	☐
<i>Does not apply (Never worked in paid employment)</i>	☐
<i>Does not apply (No spouse)</i>	☐
<i>Information not available</i>	☐

Current living arrangement:

- ☐ With parents or relatives ☐ Dorm or shared apartment with friend
- ☐ Conjugal (intimate relationship with other person, including spouse, boyfriend, etc.)
- ☐ Alone

Highest Level of Education

Check One

Completed post-graduate training ☐

Some post-graduate training ☐

Completed college, recieved four year academic degree ☐

Completed high school, may have attended or completed trade ☐

school or non-academic training requiring high school completion ☐

Attended high school ☐

Completed grammar school (8th grade) ☐

Attended grammar school ☐

No schooling ☐

Does not apply (No spouse) ☐

Information not available (specify why) ☐

Please describe your current occupation _____

OTTAWA CIVIC HOSPITAL
EATING DISORDER CLINIC

PERSONAL AND FAMILY MEDICAL HISTORY

I. PERSONAL MEDICAL HISTORY:

A. Have you had any serious medical illnesses?

Yes ☐

No ☐

If yes, please list which ones:

B. Have you had any serious surgical illnesses?

Yes ☐

No ☐

If yes, which one(s):

C. Do you presently take any medication(s)?

Yes ☐

No ☐

If yes, please list the drugs and their dosage(s):

D. Are you pregnant or do you plan to be pregnant in the next year?

Yes ☐

No ☐

Are you presently using a birth control method?

Yes ☐

No ☐

If yes, what method?

E. Have you had any of the following illnesses:

1. Diabetes mellitus

Yes ☐

No ☐

2. Migraine headaches

Yes ☐

No ☐

3. Leukemia	Yes ☐	No ☐
4. Glaucoma	Yes ☐	No ☐
5. Epilepsy	Yes ☐	No ☐
6. Head injury	Yes ☐	No ☐
7. Stroke	Yes ☐	No ☐
8. High blood pressure	Yes ☐	No ☐
9. Thyroid disease	Yes ☐	No ☐
10. Irregular menses	Yes ☐	No ☐
11. Headaches (not migraine)	Yes ☐	No ☐
12. Visual problems (e.g. blurred vision)	Yes ☐	No ☐
13. Fainting spells or dizziness	Yes ☐	No ☐
14. Jaundice	Yes ☐	No ☐
15. Allergies	Yes ☐	No ☐
16. Other	Yes ☐	No ☐

II. PERSONAL PSYCHIATRIC HISTORY:

- A. Have you had any psychiatric / emotional difficulties in the past? Yes ☐ No ☐
If yes, please briefly describe:

- B. Have you ever had any psychiatric treatment? Yes ☐ No ☐
Or has anyone ever recommended you seek psychiatric treatment? Yes ☐ No ☐
If yes, please describe briefly:

- C. Have you (now or ever) taken any psychiatric medication (tranquilizers, antidepressants, lithium, "nerve pills")? Yes ☐ No ☐
If yes, please list:

1. Have you ever been depressed / sad / blue or lost interest in things and it lasted for more than 7 days? Yes ☐ No ☐
2. Have you ever been high / elated / on top of the world for no apparent reason and it lasted more than 2 days? Yes ☐ No ☐
3. Have you ever had any unusual experiences or ideas? Yes ☐ No ☐
4. Have you ever used alcohol excessively? Yes ☐ No ☐
5. How frequently do you consume alcohol? # drinks / occasion _____
6. Have you ever been forgetful? Yes ☐ No ☐
7. Have you ever contemplated or attempted suicide? Yes ☐ No ☐
8. Have you ever used recreational drugs (uppers / downers, etc.)? Yes ☐ No ☐
9. Have you ever been anxious / nervous and it lasted for more than seven days? Yes ☐ No ☐

III. FAMILY MEDICAL HISTORY:

- A. Are there any illnesses which seem to run in your family? Yes ☐ No ☐
If yes, which illness(es) and who has which illness?
- B. Has anyone in your family had any of the following diseases?
	Yes	No	Whom Affected?
1. Diabetes Mellitus	☐	☐	_____
2. Migraine Headaches	☐	☐	_____
3. Leukemia	☐	☐	_____
4. Glaucoma	☐	☐	_____
5. Epilepsy	☐	☐	_____
6. Strokes	☐	☐	_____

IV. FAMILY PSYCHIATRIC HISTORY:

- A. Has anyone in your family ever received psychiatric treatment or hospitalization in the past or presently? Yes ☐ No ☐
If yes, whom and briefly what was the problem?

8. Has anyone in your family had any of the following illnesses?

If yes, whom?

1. Depression

2. Schizophrenia

3. Mania

4. Dementia

5. Alcoholism

6. Drug Abuse

7. Anxiety Reactions

8. Obesity

9. Anorexia

10. Bulimia

Yes

No

Whom?

☐☐

☐☐

☐☐

☐☐

☐☐

☐☐

☐☐

☐☐

☐☐

☐☐

WEEKLY SYMPTOM CHECK LIST ID# _____ DATE: _____

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

SYMPTOM NUMBER OF EPISODES LAST WEEK

- a) Binging _____
b) Vomiting _____
c) Purging _____
(Laxative and/or diuretic use)

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

SYMPTOM

LEVEL OF SEVERITY

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

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.

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PDQ-R
Personality Questionnaire

UMI

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SCID-II

UMI

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Family Environment Scale

UMI

RECEIVED JAN 30 1995

The Role of Personality Dysfunction in Determining
Perceptions of Family Environment in Bulimia Nervosa

**Ottawa
Civic Hospital**

Debriefing

1053 Carling Ave.,
Ottawa, Ontario
Canada K1Y 4E9

(613) 761-4000 Your participation in this research project is appreciated.

The purpose of this research is to determine the degree of diagnostic concordance between bulimic women and first-degree relatives who were administered the computer personality disorder interview and the family environment scale. First-degree relatives responded to the questions asked by the computer interview based on how they perceived their bulimic relative's personality to be; while women with bulimia nervosa responded to the questions based on how they perceived their own personality to be. We are interested in determining whether the perceptions which bulimic women have of their family environment are influenced by their own personality.

The research in which you have participated will provide valuable information in the areas of bulimia nervosa, family environment and personality disorders.

I would like to once again ensure you that the information which you have provided today will remain strictly confidential.

Thank you for participating in this research.

Please contact the investigators if you have any questions or comments about this research project. We expect the results to be available around the fall of 1995. If you would like more information at that time please contact us.

If you feel that you have need of psychological, psychiatric or eating disorder counselling, please contact the sponsor of this research project or the principal investigator who will provide you with information about obtaining these services.

Faculty Sponsor of this research project
Ottawa Civic Hospital

Dr. Arthur Blouin
761-4746

Principal Investigator

Judy Niles
761-3746

If you have questions about the ethics of this study please contact:

Carleton University Psychology Department Ethics Committee Chairman
Dr. L. Paquet
788-2692

Carleton University Psychology Department Chairman
Dr. B. Jones
788-2648

(Valid until January 19, 1996)

IMAGE EVALUATION TEST TARGET (QA-3)

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