The eating disorders continuum: Assessing coping styles, perceived stress, and perceived social support.

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THE EATING DISORDERS CONTINUUM:
ASSESSING COPING STYLES, PERCEIVED STRESS,
AND PERCEIVED SOCIAL SUPPORT

by

Alicia Hendley

A Dissertation
Submitted to the Faculty of Graduate Studies and Research
Through the Department of Psychology
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ABSTRACT

Previous researchers have suggested that a continuum of eating disturbance exists, with chronic dieting at one end of the spectrum, and clinically diagnosed eating disorders at the other (e.g., Mintz & Betz, 1988). With this view has come the recognition that individuals with varying levels of eating pathology report considerable distress (e.g., Killen, 1996). In particular, it has been found that a high percentage of individuals who seek outpatient treatment for an eating problem suffer from a subclinical eating disorder (e.g., American Psychiatric Association, 2000). The present study examined whether or not three different groups along a hypothesized continuum of eating disturbance differed in their scores on the following measures: the Perceived Support Scale (Friends and Family) (Procidano & Heller, 1983), the Coping Inventory for Stressful Situations (Endler & Parker, 1990a, 1990b), and the Perceived Stress Scale (Cohen, Kamarck, & Mermelstein, 1983). The non-eating-disordered group and the subclinical bulimic group each included 22 undergraduate women from the University of Windsor who were selected from a larger student sample (N=331), based on their scores on the Bulimia Test-Revised (Thelen, Farmer, Wonderlich, & Smith, 1991), and the Eating Attitudes Test-26 (Garner, Olmsted, Bohr, & Garfinkle, 1982). The clinical bulimic group included 21 women with a diagnosis of bulimia nervosa, who were inpatients in the eating disorders program at Homewood Health Centre (Guelph, ON). Results of planned and post hoc comparisons indicated that emotion-oriented coping and perceived stress discriminated each group from one another, with the clinical bulimic group receiving the highest scores on both of these measures. Non-eating-disordered women were found to report greater use of task-oriented coping than either bulimic group. Non-eating-disordered women
also reported greater use of social diversion and a higher level of perceived support from family than did clinical bulimic women. Clinical bulimic women reported less perceived support from friends than either of the remaining two groups. Subclinical bulimic women reported greater use of distraction than non-eating-disordered women. In addition, a multiple regression analysis was conducted for the entire student sample, and the following variables were found to predict level of disordered eating: emotion-oriented coping, distraction, social diversion, and perceived stress. Results are discussed within the context of the continuum hypothesis, and treatment recommendations geared toward subclinical bulimic women and clinical bulimic women are discussed.
DEDICATION

To my mother and father, for teaching me the equal importance of focus, perseverance, levity, and laughter.
ACKNOWLEDGEMENTS

I would like to express my thanks to my advisor, Dr. Cheryl Thomas, for all of her guidance, support, and constructive criticism throughout the course of my dissertation. She has been a mentor to me during the past several years of graduate school, and has taught me that any research project (no matter how unwieldy!) can be broken down into specific, manageable steps. Thank you! I would also like to thank the other members of my committee, Dr. Vicki Paraschak, Dr. Sandra Paivio, and Dr. Kathryn Lafreniere, for their knowledge and helpful input during the research process. A final thanks goes to Dr. Stuart Ross and Ms. April Gates at Homewood Health Centre. My dissertation would never have been completed had they not welcomed me into their facility, and invested their time and effort into this project.
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CHAPTER I
INTRODUCTION

Overview

The existing research literature in the area of bulimia nervosa indicates that certain variables distinguish clinical bulimic women from non-eating-disordered women. Such variables may play a potential role in the development of bulimia nervosa, as well as in recovery from the disorder. These variables have included coping style (e.g., Troop, Holbrey, Trowler, & Treasure, 1994), perceived stress level (e.g., Greenberg, 1986), and perceived social support (e.g., Grisett & Norvell, 1992). Whether or not these variables are of potential import to women exhibiting other forms of eating pathology, however, has yet to be examined. In particular, it is not known whether or not coping style, perceived stress, or perceived social support are related in meaningful ways to subclinical bulimia. Keeping in mind that a significant percentage of women who seek outpatient treatment for an eating disturbance suffer from a subclinical eating disorder (e.g., American Psychiatric Association, 2000), further investigation into the area of subclinical eating disorders is clearly warranted. Consequently, the current study compared subclinical bulimic women, non-eating-disordered women, and clinical bulimic women on the following variables: coping style, perceived social support from friends and from family, and perceived stress. Based upon the results, recommendations for early intervention and prevention programs geared towards subclinical bulimic and clinical bulimic women were provided.
The Eating Disorders Continuum

In the past few decades, considerable research has been generated in the area of eating disorders. The prevalence, possible etiology, treatment, and prevention of both clinical bulimia nervosa and clinical anorexia nervosa have been studied thoroughly. Investigators have sought to determine what variables differentiate individuals with an eating disorder from those without, and numerous variables have been suggested. As more and more information has been garnered about what makes clinical eating disorders distinct, attention has begun to turn to the possible differences that may exist between individuals with clinical anorexia or bulimia and those with subclinical eating disorders (i.e., those who engage in eating disordered behaviours that do not meet full diagnostic criteria for an eating disorder but that nonetheless warrant clinical attention; also known as a form of Eating Disorder Not Otherwise Specified) (DSM-IV; American Psychiatric Association, 1994).

In particular, researchers have begun to focus upon the "eating disorders continuum". First proposed by Nylander (1971), the concept of the eating disorders continuum represents eating disorder symptomatology as lying upon a continuum of severity, from chronic dieting at one end of the spectrum, to clinically diagnosed eating disorders at the other. According to Striegel-Moore, Silberstein, Freisch, and Rodin (1989), "Disordered eating can be conceptualized along a continuum, ranging from unconcern with weight and normal eating, to 'normative discontent' with weight and moderately disregulated/restrained eating, to bulimia nervosa" (p.500). The continuum hypothesis is based upon the belief that the differences between persons who meet
diagnostic criteria for an eating disorder, and those with eating disturbances who do not meet such criteria are "a matter of degree and not of kind" (Scarano & Kalodner-Martin, 1994, p.356). King (1990) has observed that: "eating pathology lies on a spectrum of severity, with movement occurring between arbitrarily imposed diagnostic groups" (p.29).

Various authors have attempted to categorize individuals who exhibit eating disordered behaviours into different groups along such a continuum of severity. For example, Mintz and Betz (1988) categorized women with disordered eating patterns into one of five groups: chronic dieter, binger, purger, subthreshold bulimic, and bulimic. Elsewhere, the labels used to designate specific categories along the continuum have varied slightly. For example, Scarano and Kalodner-Martin (1994) listed the following five groups: weight-preoccupied person, chronic dieter, purger, subthreshold bulimic, and bulimic.

Several researchers have argued the importance of studying the various groups that fall along the continuum, including subclinical eating disorders. According to Scarano and Kalodner-Martin (1994), "understanding the similarities and differences [between groups] provides a critical link to establishing more effective preventative and treatment interventions for individuals at various points along the continuum" (p.360). Similarly, Dancyger and Garfinkel (1995) argue that the relationship between subclinical eating disorders and clinical eating disorders needs to be examined because "it may shed light on the nature and evolution of an eating disorder and can also lead to earlier forms of intervention" (p.1019).
Numerous variables that may distinguish different groups along the continuum have been examined. Some variables have been observed to increase incrementally along the eating disorders continuum, supporting the continuum hypothesis. These include: lower self-esteem (e.g., Kalodner & Scarano, 1992; Mintz & Betz, 1988; Shisslak, Crago, & Estes, 1995; Vanderheyden & Boland, 1987); depression (e.g., Bunnell, Shenker, Nussbaum, Jacobson, & Cooper, 1990; Dancyger & Garfinkel, 1995; Stice, Killen, Hayward, & Taylor, 1998); negative body image (e.g., Mintz & Betz, 1988; Shisslak et al., 1995); obsessive thoughts about appearance and weight (e.g., Mintz & Betz, 1988); need for approval (e.g., Kalodner & Scarano, 1992); paranoia (e.g., Bunnell et al., 1990; Kalodner & Scarano, 1992); body dissatisfaction (e.g., Kalodner & Scarano, 1992; Stice et al., 1998); interoceptive awareness (e.g., Dancyger & Garfinkel, 1995); a sense of ineffectiveness (e.g., Dancyger & Garfinkel, 1995); emotionality (e.g., Stice et al., 1998); anxiety (e.g., Stice et al., 1998); and dietary restraint (e.g., Stice et al., 1998; Vanderheyden & Boland, 1987). On the other hand, some variables have been found to differentiate one group from another qualitatively (including some of the variables mentioned above), thus providing possible support for a categorical or discontinuity approach. Such variables include: distorted self-awareness (e.g., Kalodner & Scarano, 1992; Laessle, Tuschl, Waadt, & Pirke, 1989); interpersonal distrust (e.g., Garner, Olmsted, & Garfinkel, 1983; Laessle et al., 1989); as well as a sense of ineffectiveness (e.g., Garner et al., 1983; Laessle et al., 1989).

Mintz & Betz (1988) found support for the continuum hypothesis in their study of 643 college women. Participants were classified into one of six categories: normal eater
(n=211), chronic dieter (n=73), binger (n=100), purger (n=66), subthreshold bulimic (n=173), and bulimic (n=20). They were asked to complete self-report measures assessing eating disorder symptomatology, self-esteem, body satisfaction, endorsement of sociocultural mores, and body image. The results indicated that several of these variables tended to increase incrementally along a continuum of eating disturbance, including lowered self-esteem, obsessive thoughts about appearance and weight, body dissatisfaction, and more negative body image. Such findings lend support to the continuum hypothesis, and the argument that the differences between groups are primarily quantitative, rather than qualitative.

More recently, in a survey of 4,285 women and 3,831 men across Ontario, Garfinkel et al. (1995) noted that the 62 subjects who were classified as full-syndrome bulimics and the 28 who were classified as partial-syndrome bulimics did not differ on any comorbid diagnoses that were assessed, including major depression and various anxiety disorders. They concluded that "the two syndromes reflect different levels of severity on a single continuum of vulnerability; this supports a spectrum concept of this disorder" (p.1057).

In contrast, Bunnell et al. (1990) observed that a number of differences were found to exist between subjects with clinical bulimia and those with subclinical bulimia. Specifically, it was noted that the fourteen subjects who met diagnostic criteria for bulimia exhibited significantly higher levels of depression than did the eight subjects classified with subclinical bulimia. The bulimic subjects also had higher scores on a number of other indicators of distress, including the following scales of the Symptom
Checklist-90-Revised: Obsessive-Compulsive, Interpersonal Sensitivity, Depression, Paranoia, and Psychoticism (p.360). According to Bunnell et al., "The clear differences between the two bulimic groups provide support for the maintenance of relatively strict criteria for the diagnosis of bulimia nervosa" (1990, p.361). However, due to the small sample size included in this study, interpretation of such findings should be done cautiously.

Dancyger and Garfinkel (1995) also assessed the relationship between subclinical eating disorders and clinical eating disorders on a number of characteristics. Subjects suffering from a clinical eating disorder (n=30) reported levels of depression, interoceptive awareness, and ineffectiveness that were higher than the levels reported by the subclinical eating disorder subjects (n=51), who in turn reported higher levels than the normal-control subjects (n=57). According to Dancyger and Garfinkel, "These findings are in keeping with a continuum model. But it is a continuum of vulnerability based on a number of risk factors, some of which can themselves occur along a continuum" (1995, p.1023).

More recently, in a study in which the DSM-IV classifications for bulimia nervosa and binge-eating disorder were assessed, Hay and Fairburn (1998) determined that subjects with bulimia nervosa purging type (n=63) presented with the most severe psychiatric symptomatology, when compared to subjects with bulimia nervosa nonpurging type (n=16) or to subjects with binge-eating disorder (n=63) (Hay & Fairburn, 1998). These researchers concluded that, "the findings suggest that bulimic eating disorders exist on a continuum of clinical severity, from bulimia nervosa purging
type (most severe), through bulimia nervosa nonpurging type (intermediate severity), to
BED (least severe)” (p.14).

Similarly, Stice et al. (1998) found support for the continuum hypothesis in a
study comparing 19 bulimic women, 141 subthreshold bulimic women, and 660 non-
eating-disordered women. Several variables discriminated the groups along a single
dimension, including dietary restraint, body dissatisfaction, emotionality, depressive
symptoms, and anxiety. The authors stated that, “The finding that subthreshold bulimic
women showed elevated affective disturbances relative to controls suggests that
increased attention might be focused on subdiagnostic levels of bulimia” (p.789).

Most of the studies that have examined possible differences and similarities
between groups with different levels of disordered eating have been cross-sectional in
nature. Such studies have provided useful information, but have not been able to
determine whether or not a progression exists over a period of time from chronic dieter to
subclinical eating disorder to clinical eating disorder. If evident, such a progression could
provide additional support for the concept of the eating disorders continuum. Due to the
cost and time involved, however, only a few prospective studies have been conducted in
this area (e.g., Attie & Brooks-Gunn, 1989; Killen et al., 1996; Striegel-Moore et al.,
1989).

Patton, Johnson-Sabine, Wood, Mann, and Wakeling (1990) assessed 1010
fifteen-year-old female students for eating disorder symptomatology using the Eating
Attitudes Test (EAT). Of these subjects, 735 were reassessed twelve months later. Based
upon initial EAT scores, 230 subjects were interviewed, and 176 were reinterviewed at
follow-up. During both interviews, clinical status and possible risk factors for eating disorders (such as "perceived current social stress" and "reported family weight and eating patterns") were assessed (p.385). During the initial assessment, subjects were classified into one of four groups: non-dieter (n=98), dieter (n=61), partial syndrome of an eating disorder (n=13), and bulimia nervosa (n=4) (no cases of anorexia nervosa were noted). At follow-up, group composition changed somewhat: non-dieter (n=111), dieter (n=39), partial syndrome of an eating disorder (n=20), and bulimia nervosa (n=6). It was found that the majority of dieters did not develop more serious eating problems. However, it was also noted that those who were classified as dieters at the outset were eight times more likely than non-dieters to be diagnosed as having bulimia or a partial syndrome eating disorder at follow-up. As the above research illustrates, considerable interest has developed about whether or not eating disorder symptomatology exists on a continuum of severity. Several authors have voiced the need for future investigations that focus more specifically on subclinical eating disorders, and on how the disorders may or may not differ from clinical eating disorders. In terms of future eating disorders research, it has been argued that "the subclinical level is perhaps in greatest need of attention" (Klodner & Scarano, 1992). Similarly, Fairburn and Beglin (1990) observe that, "it is time for a shift in emphasis away from prevalence per se toward studies of the nature, course, and etiology of the full spectrum of disturbance that exists in the community" (p.407).

In the past, researchers have frequently expressed alarm about the high percentage of women who indicate that they engage in disordered eating at a subclinical level. For
example, Mintz and Betz (1988) found that 64% of their 643 female subjects fell between the "normal eater" and "bulimic" classifications in their college sample. In a study in which 920 college female students were evaluated using a structured interview, 15% (n=141) were classified as having subthreshold bulimia (Stice et al., 1998). Similarly, in a prospective study that examined the extent of disordered eating among first-year university students, it was found that by the end of the academic year, almost 15% of the female participants had begun to binge eat for the first time (Striegel-Moore et al., 1989). Striegel-Moore et al. (1989) noted that: "Although `normative discontent' does not merit categorization as a psychiatric diagnosis, it both can cause considerable distress and can be a potential risk factor for development of the full clinical syndrome of bulimia nervosa" (p.500).

More recently, Hesse-Biber (1992) assessed the frequencies of disordered eating in a sample of 141 college women on two separate occasions, over a two-year interval. Two types of measures were used to determine frequency of disordered eating: 1) a noncontinuum measure, the Eating Attitudes Test (EAT-26; Garner, Olmsted, Bohr, & Garfinkel, 1982); and 2) a continuum measure developed for the study. The continuum measure was a 10-item questionnaire, which classified respondents into one of five categories across the eating disorder continuum: 1) ideal eaters; 2) normal dieters; 3) presyndrome binge eaters and presyndrome serious dieters; 4) at risk bingers/purgers, at risk bingers, and at risk fasters; 5) problem binge eaters, problem fasters with some binge-eating/purging, and problem fasters with no binge-eating/purging. The results indicated that when the noncontinuum measure was used, the prevalence rate for eating
disorders matched rates found in other college population studies. However, when the continuum measure was used, up to 25% of the sample scored in the "at risk" category for eating problems. Hesse-Biber concluded that: "The use of noncontinuum or dichotomous measures on nonclinical samples masks the range of college women's problems with food and may present an overly optimistic picture of women's eating disorders" (p.389).

In summary, considerable evidence exists that a disturbingly high percentage of young women engage in disordered eating at a subclinical level (e.g., Herzog, Norman, Rigotti, & Pepose, 1986; Stice et al., 1998). Past research has indicated that many of these individuals are experiencing considerable distress (e.g., Dancyger & Garfinkel, 1995; Garfinkel et al., 1995; King, 1990; Patton et al., 1997; Shisslak, Crago, & Estes, 1995). It has been reported, for example, that anywhere from 25% (Bunnell et al., 1990; Mitrany, 1992) to over 40% (Herzog, Hopkins, & Burns, 1993; Williamson, Gleaves, & Savin, 1992) of women who seek treatment for an eating disturbance suffer from a subclinical eating disorder. According to the recent practice guidelines set forth by the American Psychiatric Association (2000) for treating eating disordered clients, nearly 50% of patients who present at tertiary care programs with an eating disorder receive a diagnosis of Eating Disorder Not Otherwise Specified. Herzog et al. (1993) noted that, "Patients with less severe eating disorder symptoms may still experience substantial distress and impairment" (p.266). Thus, it can be argued that subclinical eating disorders are significant phenomena in and of themselves, and that they warrant additional study.
In particular, further examination of variables that may distinguish individuals who engage in subclinical eating disorders from "normal" eaters, as well as from those with a clinically diagnosable eating disorder, is warranted. Such research may enable mental health practitioners to tailor early intervention programs to target the specific needs of individuals with subclinical eating disorders. According to Kalodner and Scarano (1992), "The identification of psychological and behavioral correlates for each group [on the continuum] is necessary to establish effective treatments" (p.31). If, as a number of researchers have suggested, eating disturbances lie upon a continuum of severity, and if a progression exists within certain individuals with subclinical eating disorders to later develop a clinical eating disorder (e.g., Patton et al., 1990), then targeting the possible risk factors for subclinical eating disorders may help to prevent certain individuals from developing a clinical eating disorder. According to Stice et al. (1998), “findings from studies examining subthreshold levels of bulimic pathology may generalize to the prediction of diagnostic levels of bulimia” (p. 789). Investigators have noted the tenacious nature of clinical eating disorders once they become chronic (e.g., Hsu, 1986), with relapse rates of between 30% and 50% following successful treatment reported (American Psychiatric Association, 2000). Keeping in mind the finding that a large proportion of the women who seek treatment for eating pathology suffer from a subclinical eating disorder (e.g., Killen et al., 1996; Williamson et al., 1992), attempts at prevention and early intervention are definitely warranted. Examining variables that may be associated with subclinical eating disorders could be considered a first step in that direction.
Defining Subclinical Bulimia

Subclinical bulimia has been discussed under a number of other names by previous authors, including subthreshold bulimia (e.g., Kalodner & Scarano, 1992; Mintz & Betz, 1988), partial syndrome bulimia (e.g., Garfinkel et al., 1995; Shisslak et al., 1995), subdiagnostic bulimia (e.g., Herzog et al., 1993), and Eating Disorder Not Otherwise Specified (EDNOS) (DSM-IV, 1994). Despite the variety in labels, the operational definition that has been provided by each author for the syndrome in question has remained fairly consistent. Specifically, many researchers have used a definition for subclinical (or partial syndrome, subthreshold, etc.) bulimia that is similar to that found in the DSM-IV (1994), where it is listed as an example of an EDNOS: "All of the criteria for Bulimia Nervosa are met except that the binge eating and inappropriate compensatory mechanisms occur at a frequency of less than twice a week or for a duration of less than three months" (p.550).

Operationally defining subclinical bulimia as meeting all of the DSM-III-R or DSM-IV criteria for bulimia nervosa except for the frequency and/or duration criteria has been used in many studies (e.g., Bunnell et al., 1990; Dancyger & Garfinkel, 1995; Garfinkel et al., 1995; Mizes & Sloan, 1998; Scarano & Kalodner-Martin, 1994; Stice et al., 1998). According to Mintz and Betz (1988), subthreshold (i.e., subclinical) eating disorders, such as subthreshold bulimia, can be differentiated from atypical eating disorders in the following manner:

Atypical eating disorders refer to cases in which one or more features are absent and thus include persons who binge but do not purge, those who purge but do not
binge, and chronic dieters. In contrast..., subthreshold eating disorders refer to individuals who do not fulfil operational versions of the diagnostic criteria for anorexia nervosa or bulimia nervosa because one or more features, although present, are not of sufficient severity (p.463).

In order to maintain continuity with previous research, in the present study subclinical bulimia was operationally defined by utilizing the DSM-IV (1994) definition for a type of EDNOS (i.e., meeting all of the criteria for bulimia nervosa except for the frequency and/or duration criteria). Thus, like individuals suffering from bulimia nervosa, persons considered to suffer from subclinical bulimia had to also engage in recurrent binge eating episodes in which they experienced a lack of control, and had to also attempt to prevent weight gain by implementing inappropriate behaviours, such as fasting, excessive exercise, self-induced vomiting, misuse of laxatives, and/or misuse of diuretics. Further, the self-evaluations of subclinical bulimics had to be greatly influenced by their weight and body shape (DSM-IV, 1994, p.549-550).

Consistent with previous studies in the area of the eating disorders continuum, subclinical anorexia was not included as a variable in the present study. According to Scarano and Kalodner-Martin (1994), "Anorexia...has been described as qualitatively different than other eating disorders" (p.356). By focusing solely upon subclinical bulimia rather than subclinical anorexia, continuity with the research conducted thus far in the area of the eating disorders continuum was maintained (e.g., Mintz & Betz, 1988; Garfinkel et al., 1995; Scarano & Kalodner-Martin, 1994; Stice et al., 1998). In addition, because the amount of previous research in this area has been fairly limited, it was hoped
that by focusing solely upon subclinical bulimia, the results of the present study would help to build on the current knowledge base. Further, subclinical bulimia, which is based upon specific identifiable behaviours (i.e., binge eating and purging) was judged to be easier to operationally define than subclinical anorexia. Finally, because the other variables of interest in the current study (i.e., perceived social support, coping styles, perceived stress) have tended to be studied in conjunction with bulimia nervosa, it was decided that by focusing upon subclinical bulimia, continuity with past research in these areas would be maintained as well.

It was also hoped that by focusing on subclinical bulimia, more specific information could be provided about one of the several forms of eating pathology typically designated to the EDNOS category. According to Wilson, Hefferman, and Black (1996), “the different variations of eating disorders that are grouped within this category are not well-specified, and as a whole they have been relatively ignored in the clinical and research literature” (p.541).

**Perceived Social Support**

Numerous researchers have examined variables thought to be related to bulimia nervosa, and have attempted to determine whether or not certain variables may increase an individual's vulnerability to developing this eating disorder. One line of research has highlighted excessive stress as a possible risk factor in the development of bulimia nervosa. Several researchers have noted that the number of stressful life events experienced by persons with bulimia nervosa prior to the onset of the disorder is greater than the number of such events experienced by non-eating-disordered individuals (e.g.,
Greenberg, 1986; Lacey, Coker, & Birtchnell, 1986). Further, it has been found that up to 76% of bulimsic experience stressful life events prior to developing the disorder (Troop et al., 1994). However, other researchers note that the type of stressors reported by clinical bulimic women are not unique to them, leading to the speculation that variables other than stress may be involved (e.g., Cattanach & Rodin, 1988). According to Troop et al., "Many of these events and difficulties ...fall within the normal range of experiences for young women.... so it is likely that other variables may mediate between stress and onset of an eating disorder" (1994, p.535).

One of the variables which has been suggested as a potential mediating factor in the development and/or maintenance of bulimia nervosa is perceived social support. Grissett and Norvell (1992) observe that, "Perceived availability of support has been shown to protect individuals from the psychological impact of stressful life events and chronic life strains" (p.293).

Defined as "the extent to which an individual believes that his/her needs for support, information, and feedback are fulfilled" (Procidano & Heller, 1983, p.2), perceived social support has been found to be quite distinct from other measures of social support, including social embeddedness (i.e., the size of one's social network), and enacted support (i.e., behaviours which others do in order to help a particular individual) (Barrera, 1986). According to Tiller et al. (1997), "Social support...does not simply equate with the size of the social network as relationships may be unsupportive or conflictual...It is the perceived adequacy of the available social support that is thought to influence vulnerability to mental disorder" (p.32).
The need to distinguish between the actual levels of social support that individuals receive and how they perceive such support was highlighted in a study which compared 23 bulimic college women and 38 nonbulimic college women on measures assessing social dependency and enacted support (Jacobson and Robins, 1989). The results indicated that the bulimic subjects reported having greater needs for social dependency than the nonbulimic subjects did. However, the two groups did not differ in the levels of social support that they reported receiving. According to Jacobson and Robins, "the levels of social support which bulimics receive are not...deficient, but because these women are highly socially dependent, they perceive their relationships as lacking" (1989, p.669).

Elsewhere, however, the actual level of social support that women with bulimia nervosa report receiving has also been found to be of significance. For example, in a pilot study involving an outpatient population, the number of close relationships that subjects reported (i.e., network size) was found to predict recovery from bulimia nervosa (Herzog, Keller, Lavori, & Sacks, 1991). More recently, differences in both the levels of social support and the perceived adequacy of support were noted between female bulimic patients (n=81) and a control group of female students (n=86) (Tiller et al., 1997). The bulimic patients reported having smaller social networks and less actual practical and emotional support than the students, and they indicated more dissatisfaction with their support than did the students.

In a study conducted by Rorty, Yager, Buckwalter, and Rossotto (1999), 40 actively bulimic women reported having significantly fewer friends and family members
available to provide emotional support than either 40 women in remission from bulimia or 40 non-eating-disordered women. Further, both the actively bulimic group and the recovered group were significantly more dissatisfied with the quality of emotional support provided by their family members.

Grissett and Norvell (1992) examined whether or not bulimic women differed from non-eating-disordered women in the quality of their relationships and in their perceived social support from friends and family. Their sample of 21 bulimic college women and 21 non-eating-disordered college women completed measures assessing perceived support, quality of relationships, perceptions of positive and negative social interactions, social competence, and psychopathology. The bulimic women reported more negative interactions and less perceived social support from significant others (i.e., friends and family) than did their non-eating-disordered peers. Keeping in mind the potential buffer effect of perceived availability of support (e.g., Wethington & Kessler, 1986), bulimic women who report less perceived social support may be less protected from the effects of stress than women who report higher levels of perceived support, and may be at risk for continued psychological distress and the maintenance of bulimic symptomatology.

A general finding of greater social impairment among bulimic women has been noted by several authors (e.g., Herzog, Keller, Lavori, & Ott, 1987; Herzog, Pepose, Norman, & Rigotti, 1985; Johnson & Berndt, 1983; Striegel-Moore, Silberstein, & Rodin, 1993). Herzog et al. (1987) observed that: "Treatment should address the specific areas of social dysfunction" (p.746). Accordingly, researchers have begun to point to the
potentially positive role that social support may play in the recovery process. For example, in a follow-up study of 50 women who had been diagnosed with bulimia nervosa ten years earlier (Collings & King, 1994), subjects reported that they considered their friends and partners to be their primary sources of support during the past decade, rather than professional care-givers.

In summary, it is evident that perceived social support may be a potentially significant risk factor in the development and/or maintenance of bulimia nervosa, and may play an important role in the recovery process from this disorder. However, the research conducted thus far has been fairly limited (Schmidt, Tiller, & Treasure, 1993), and the studies that have been reported have focused primarily upon clinical (rather than subclinical) eating disorders. Tiller et al. (1997) notes, "Surprisingly, given recent clinical and research interest in the association between social relationships and mental health, there have been few systematic studies of social support in eating disorders" (p.32).

Nowhere is the need for further investigation into the possible relationship between social support and eating pathology more apparent than in the area of subclinical bulimia. Given the finding that individuals with bulimia nervosa report poorer quality of relationships and less perceived social support than non-eating-disordered individuals (e.g., Grissett & Norvell, 1992), and given that a lack of perceived social support may affect outcome for women with bulimia nervosa (e.g., Collings & King, 1994; Herzog et al., 1991), determining whether or not such a relationship also exists between perceived social support and subclinical bulimia is important.

Because perceived social support may play an important role in an individual's
recovery from clinical bulimia (e.g., Collings & King, 1994; Herzog et al., 1991), programs which attempt to address the possible deficits in social support, such as an assistance program for the significant others of bulimics (e.g., Kapoor, 1989), have been established. Kapoor (1989) notes that, "bulimics need...[their significant others] to be supportive of their recovery. Significant others' failure to do so may deter their bulimic's progress in recovery" (p.50). According to Garner and Garfinkel (1985), "friends and relatives can be helped to provide an environment that will facilitate the patient's own efforts to overcome the problem" (p.175).

Determining whether or not a relationship exists between perceived social support and subclinical bulimia may be an important first step in the development of an early intervention program geared toward individuals with subclinical disordered eating patterns. Further, by determining whether or not perceived social support distinguishes persons suffering from subclinical bulimia from those with bulimia nervosa and from non-eating-disordered individuals, one can provide evidence for or against the continuum hypothesis of eating disorders. Specifically, if a quantitative difference is noted between the groups, with bulimics reporting less perceived social support than subclinical bulimics, who in turn report less perceived social support than normal eaters, this would be consistent with the continuum hypothesis of eating disturbance.

Coping Style

Some variables may mediate between potential stressors and psychological distress (e.g., Troop et al., 1994). In particular, the coping strategies that individuals utilize when faced with potential stressors may affect how they perceive and react to
them. According to Cattanach and Rodin, "The...research literature on stress...now views stress as a process that includes...mediators such as appraisal, control, coping, and social support that may predispose one to experience stress or to be more reactive to potential stressors" (1988, p.75).

Coping, defined as "efforts, both cognitive and behavioral, to manage environmental and internal demands and conflicts affecting an individual that tax or exceed that person's resources" (Coyne, Aldwin, & Lazarus, 1981, p.440), has been widely studied for several decades. More than thirty years ago, Lazarus (1966) proposed that the strategies that individuals use to cope with stressful situations can be classified into two general ways of coping: problem-focused coping ("aimed at problem solving or doing something to alter the source of the stress") and emotion-focused coping ("aimed at reducing or managing the emotional distress that is associated with...the situation") (Carver, Scheier, & Weintraub, 1989, p.267). In 1980, a measure was developed to assess these general coping styles: the Ways of Coping Checklist (Folkman & Lazarus).

Following Lazarus's initial classification of coping, various models have been proposed, including a model that divides methods of coping into approach or avoidance strategies. Researchers have noted that different forms of avoidance coping exist, including distracting oneself from a potential stressor or seeking social diversion (Koff & Sangani, 1997). Certain coping strategies seem to be more closely associated with psychopathology than others. In particular, emotion-oriented coping and avoidance coping via distraction have consistently been found to be correlated with various forms of psychopathology and distress. Interestingly, no such relationship has been found for task-
oriented coping or avoidance coping via social diversion (e.g., Endler & Parker, 1990a; Koff & Sangani, 1997).

In the bulimia nervosa literature, coping style has been highlighted as a variable of possible import in the development, maintenance, and/or exacerbation of bulimic symptomatology. It also appears that the coping strategies that individuals utilize may play a significant role in their recovery from bulimia nervosa. Past investigators have noted that the types of stressors which bulimic women report are not unique to them, but are also commonly reported by women with no history of an eating disorder (e.g., Troop et al., 1994). These findings has led to the speculation that certain mediating variables, including coping style, may influence how bulimic women react to stressors. Cattanach and Rodin (1988) state that: "An interactive explanation drawing on mediational components is necessary in order to determine why bulimics react with disordered eating behavior to events that many people experience" (p.80).

The relationship between coping style and clinical eating disorders has been assessed in a number of studies. For example, Troop et al. (1994) were interested in whether or not persons with eating disorders differ from non-eating-disordered individuals in the coping strategies that they employ. Their subjects were 24 anorexic and 66 bulimic women patients, and 30 nonpatient college women. The women completed a variety of measures, including the revised Ways of Coping Checklist (Vitaliano et al., 1985), which assessed the degree to which respondents used the following coping strategies: avoidance, wishful thinking (a form of avoidance), problem-focused coping, seeking social support, and self-blame. Troop et al. found that bulimic subjects engaged
in significantly more wishful thinking than did controls, that they sought less social support than did controls, and that both anorexic and bulimic subjects used significantly more avoidance than controls.

Janzen, Keely, and Saklofske (1992) were interested in the possible relationship between bulimic symptomatology and coping style in a nonclinical, college sample. Coping orientation was assessed using the Coping Inventory for Stressful Situations (CISS; Endler & Parker, 1990a), a self-report inventory that measures three coping strategies: emotion-oriented coping, task-oriented coping, and avoidance-oriented coping. The latter coping strategy is further divided into distraction and social diversion. Emotion-oriented coping was positively related to bulimic symptomatology, whereas an inverse relationship existed between bulimic symptoms and task-oriented coping. No significant relationship was noted between avoidance-oriented coping and bulimic symptomatology. According to Janzen et al. (1992):

present findings suggest that female students reporting more severe bulimic symptoms, when faced with stressful situations, are more likely to respond with emotionality, increased self-focus, and fantasy, and are less likely to respond with active attempts to solve or rethink the problem or change the situation (p.398).

In other research, Koff and Sangani (1997) examined the possible relationship between coping style, negative body image, and eating pathology. Their sample of 128 female college students completed measures assessing negative body image, eating disturbance, and coping strategies. Coping orientation was once again assessed using the CISS (Endler & Parker, 1990a). The researchers found that eating disturbance was
significantly related to emotion-oriented coping. Interestingly, in contrast to the findings of Janzen and colleagues, eating disturbance was also found to be positively related to distraction. The researchers noted that level of body dissatisfaction did not influence the relationship between emotion-oriented coping and level of eating disturbance. No relationship was found between level of eating pathology and either task-oriented coping or social diversion. The authors concluded, "[emotion-oriented] coping should be considered a risk factor for eating disturbance" (p.55).

Even more recently, Denisoff and Endler (2000) evaluated the possible relationships among stress, coping styles (using the CISS), and weight preoccupation in a sample of 206 college women. Both emotion-oriented coping and distraction positively predicted weight preoccupation, whereas social diversion was a negative predictor (task-oriented coping was not a significant predictor). Interestingly, the relationship between coping styles and weight preoccupation was not conditional upon stress.

In a study conducted by Yager, Rorty, and Rossotto (1995), the coping strategies of 40 bulimic women, 40 women who had recovered from bulimia, and 40 women who had never suffered from an eating disorder, obesity, or chronic dieting were compared. No significant differences were found between the recovered bulimic women and the non-eating-disordered control group in the coping strategies that they utilized. However, there were significant differences between the currently bulimic women and the other two groups. Specifically, it was noted that the women who were currently bulimic were less likely than the other two groups to use problem-focused coping (including planning and active coping), or to seek out emotional support. Further, they were more likely than
the recovered bulimic women and the control group women to utilize behavioural
disengagement as a method of coping. The finding that recovered bulimic women and
non-eating-disordered women did not differ in the coping strategies that they used when
faced with a stressor suggests that coping may play a role in recovery from bulimia
nervosa and/or prevention from relapse.

The tendency for women suffering from bulimia nervosa to utilize emotion-
focused and/or avoidant coping strategies more often than non-eating-disordered women
has been noted elsewhere (e.g., Mayhew & Edelmann, 1989; Shatford & Evans, 1986;
Soukup, Beiler, & Terrell, 1990). Cattanach and Rodin (1988) speculate that, in the
context of other important factors (e.g., chronic stressors, dieting), women who
consistently use emotion-focused or avoidant coping methods may be at risk for
developing an eating problem.

The above findings cannot be used to make causal statements regarding the nature
of the relationship between coping style and bulimia nervosa. It is not known whether the
use of certain maladaptive coping strategies contributes to the development of bulimic
symptomatology or, alternatively, whether the development of bulimia (or psychological
distress in general) leads to the more frequent usage of coping strategies that are
maladaptive. However, regardless of the direction of the relationship, the finding that
bulimia nervosa is associated with certain coping strategies lends support to the notion
that coping style should be considered as a variable of potential significance in programs
aimed at the treatment and/or prevention of bulimia nervosa. As Mayhew and Edelmann
(1989) note; "teaching vulnerable individuals adaptive stress-coping strategies and
cognitive restructuring could be part of a preventative therapeutic package" (p.583).

Given the evidence of a relationship between coping style and bulimia nervosa, a need remains in the literature to examine whether or not individuals who engage in bulimic behaviour at a subclinical level utilize similar coping strategies. If emotion-focused coping and certain forms of avoidant coping (e.g., distraction) are associated with bulimia nervosa (e.g., Koff & Sangani, 1997; Troop et al., 1994), and if individuals who have recovered from bulimia employ more active methods of coping (e.g., Yager et al., 1995), then determining whether or not subclinical bulimia and coping style are also related is useful. However, according to Koff and Sangani (1997), "relatively few studies have directly examined the relationship between coping and eating disturbance" (p.52).

Determining whether or not a relationship exists between subclinical bulimia and coping style could aid in the development of early intervention programs tailored specifically to the needs of individuals suffering from subclinical bulimia. It is possible, for example, that the coping strategies most often used by subclinical bulimics differ qualitatively from those employed by persons with bulimia nervosa. If this were the case, then an intervention program which focuses on the coping strategies used by clinical bulimic women might not address the specific needs of those with subclinical bulimia. If, on the other hand, subclinical bulimics utilize coping strategies similar to clinical bulimic women, only with less frequency (i.e., a quantitative difference), then perhaps a more general intervention program would be warranted, aimed at modifying the coping strategies used by both groups.

Moreover, by determining whether or not any differences exist in the coping
strategies used by subclinical bulimics and those suffering from bulimia nervosa, the 
continuum hypothesis of eating disorders could be tested. If these two groups are found 
to utilize quite distinct coping strategies when faced with stress (a qualitative difference),
the categorical view of eating disorders would be supported. On the other hand, if the two 
groups are found to utilize similar coping strategies, with more or less frequency, that 
would lend support to the notion that for individuals who engage in disordered eating,
certain variables tend to increase incrementally along a continuum of severity (the 
continuum hypothesis).

Treatment Strategies for Clinical Bulimia and Subclinical Bulimia

The eating disorders literature includes extensive information concerning possible 
treatments for persons suffering from bulimia nervosa, in both inpatient and outpatient 
settings (e.g., Craighead & Kirkley, 1994; Fairburn, 1985; Freeman, 1991; Garner & 
Garfinkel, 1997; Kinoy, 1994; Rosen & Leitenberg, 1985; Scarano & Kalodner-Martin, 
1994; Steiger, 1989; Turnbull, Schmidt, Troop, Tiller, Todd, & Treasure, 1997; Yager, 
1994). Treatment options for persons with bulimia are extremely varied, and may involve 
short- or long-term approaches with affected individuals, couples, families, or groups. 
Intervention strategies range from cognitive therapy, individual psychotherapy, 
behavioural management, cognitive-behavioural treatment, group psychotherapy, family 
therapy, residential treatment, nutritional counseling, psychoeducation, to pharmacology 
(e.g., Garner & Garfinkel, 1997).

The treatment plan that is implemented may vary considerably across individuals, 
depending on their specific needs. For example, according to the recent practice
guidelines developed by the American Psychiatric Association (APA, 2000) for treating patients with eating disorders, the level of care provided to a patient (i.e., outpatient, intense outpatient, partial hospitalization, residential treatment centre, inpatient hospitalization) should vary, based on certain patient characteristics. Such characteristics may include: medical complications, suicidality, weight, motivation to recover, comorbid disorders, structure needed for eating, purging behaviour, environmental stress, and treatment availability (p.20).

Similarly, the decision about what treatment to implement should depend in part on the individual's specific needs and strengths. Recent outcome research suggests that certain treatment approaches are more efficacious than others in the treatment of bulimia nervosa. Specifically, cognitive-behavioural psychotherapy has been found to be most effective in treating bulimia nervosa (e.g., APA, 2000; Fairburn et al., 1993; Garner, Rockert, Davis, Garner, Olmsted, & Eagle, 1993; Laessle, Zoettle, & Pirke, 1987; Peterson & Mitchell, 1999; Wilson et al., 1999), and has been found to be superior to both waiting list (e.g., Lee & Rush, 1986) and supportive psychotherapy (e.g., Walsh et al., 1997).

Other treatment approaches which have been shown to effect positive change for clinical bulimic women include antidepressant medication (e.g., APA, 2000), and interpersonal psychotherapy (e.g., Peterson & Mitchell, 1999), the latter having been found to be as effective as cognitive-behavioural therapy at long-term follow-up (e.g., Fairburn, Norman, Welch, O’Conner, Doll, & Peveler, 1995). Family therapy and group therapy have also been recommended as treatment options (e.g., APA, 2000).
In many of the approaches used, treatment with clinical bulimic clients includes some form of behaviour modification, in order to reduce the binge-eating and purging behaviours (e.g., APA, 2000). Examples of behavioural techniques include: 1) self-monitoring, such as keeping a daily diary of food intake, binge-eating, purging, and the anxiety associated with such occurrences (e.g., Freeman, 1991); 2) providing the client with didactic information about nutrition and the physical effects of binge-eating and purging (e.g., Kinoy, 1994); as well as 3) exposure plus response-prevention treatment (ERP; Rosen & Leitenberg, 1985). The latter behavioural strategy is based upon an anxiety-reduction model, in which clinical bulimics are hypothesized to develop considerable anxiety following a binge, and purge to reduce the anxiety. In this model, purging is thought to serve a purpose similar to obsessive-compulsive rituals. An ERP program, therefore, includes two components: "1) exposure to the feared stimulus (e.g., eating forbidden foods), and 2) prevention of the escape response (i.e., vomiting)" (Craighead & Kirkley, 1994, p.150).

Cognitive-behavioural treatment typically incorporates a number of behavioural techniques, while maintaining a cognitive focus. According to Fairburn (1985), three stages of cognitive-behavioural treatment should be considered:

In the first stage, the main emphasis is on establishing some degree of control over eating, and the techniques used are largely behavioral. In the second, treatment is more cognitively oriented, with particular stress being placed on the identification and modification of dysfunctional thoughts, beliefs, and values. In the final stage, the focus is on the maintenance of change (p.166).
It is during the second and third stages of treatment that a client's coping orientation should be considered, and treatment may include teaching more adaptive, active coping strategies for dealing with stressful situations (e.g., Craighead & Kirkley, 1994). According to Grissett and Norvell (1992), "teaching communication, coping, and problem-solving skills may help bulimic women by improving their daily functioning, increasing self-efficacy, reducing conflict, and improving the quality of their relationships" (p.298).

In contrast to the abundant treatment literature that exists for bulimia nervosa, little has been written concerning the possible intervention strategies to be used when treating subclinical bulimics. According to Kalodner and Scarano (1992), "interventions that may be helpful in treating individuals who fall into groups at the nonclinical points on the eating continuum have not received much attention" (p.35).

It is not known, for example, whether or not the intervention techniques that have been found to be effective with clinical bulimic clients in outcome research (e.g., cognitive-behavioural therapy) would be equally efficacious when treating those who engage in bulimic behaviour at a subclinical level (Peterson & Mitchell, 1999). Scarano and Kalodner-Martin (1994) have argued for the development of prevention and treatment strategies that are tailored to the needs of each group along the eating disorder continuum. They posit that strategies developed specifically for each group are necessary because the relative importance of certain issues and concerns varies across the continuum. According to Hesse-Biber (1992), "A continuum approach allows education and treatment strategies to be tailored to meet the range and variability of nonclinical
eating patterns" (p.389).

Previous researchers have noted that higher rates of binge-eating and vomiting among clinical bulimic clients may predict a poor treatment outcome (e.g., Fahy & Russell, 1993; Wilson et al., 1999). Subclinical bulimia, by its very definition, entails reduced frequencies of such behaviours. Thus, it can be argued that in order to increase the likelihood of a positive treatment response, intervention strategies should be developed which focus specifically on individuals engaging in bulimic behaviours at the subclinical level.

Various authors have argued that two general components of eating disturbances exist (e.g., Laessle et al., 1989), and that these factors should be considered when developing a treatment plan for a client with disordered eating (e.g., Kalodner & Scarano, 1992). The first component involves a negative body image and an overemphasis on weight. The second component includes psychological disturbances, such as anxiety or depressed mood. Kalodner and Scarano (1992) posit that the relative importance of each component may vary, depending on location along the eating disorders continuum.

Based on this model, Kalodner and Scarano describe a "two-track" approach to treatment to be used when treating different groups along the eating disorder continuum (i.e., chronic dieters, purgers, subthreshold bulimics, and clinical bulimics). Track 1 corresponds to the first component of the model, and includes a focus on body image and weight, while Track 2 uses various interventions to address such issues as low self-esteem, anxiety, and depression. It is suggested that when developing a treatment plan for
clinical bulimics and subclinical bulimics, treatment should differ most in the Track 2 approaches used, depending upon their relative importance.

For the present study, data concerning seven variables were considered, in order to help determine whether specific "Track 2" interventions for subclinical bulimic women should be developed, or, alternatively, whether general interventions for all individuals with bulimic symptomatology are more appropriate. Non-eating-disordered women, subclinical bulimic women, and clinical bulimic women were compared on the following variables: a) emotion-oriented coping; b) task-oriented coping; c) distraction; d) social diversion; e) perceived social support from friends; f) perceived social support from family; and g) perceived stress. It was hoped that the results from the present study would help determine: 1) whether or not specific Track 2 interventions involving the above variables are necessary for women suffering from subclinical bulimia; and 2) if specific interventions are warranted, then what the interventions should be.

For each of the above seven variables, differences between each of the three groups of women could present themselves in five alternative ways (with the possible size and/or direction of differences for each alternative varying considerably). The five alternatives include: 1) no significant differences between groups; 2) significant differences between all three groups; 3) significant differences between clinical bulimics and the remaining two groups, but no significant differences between non-eating-disordered controls and subclinical bulimics; 4) significant differences between non-eating-disordered controls and the remaining two groups, but no significant differences between subclinical bulimics and clinical bulimics; and 5) significant differences
between subclinical bulimics and the remaining two groups, but no significant
differences between non-eating-disordered controls and clinical bulimics. Depending on
what differences are found between the three groups for each variable, support for or
against the development of specific Track 2 interventions for subclinical bulimics could
be provided.

For example, if emotion-oriented coping were found to significantly differentiate
all three groups from one another (e.g., clinical bulimic women were found to use
emotion-oriented coping more frequently than subclinical bulimic women, who in turn
were found to utilize emotion-oriented coping more often than non-eating-disordered
women), results would provide support for the importance of targeting specific
interventions to each eating disordered group. In particular, one could argue that although
emotion-oriented coping should be addressed during the treatment of both clinical
bulimic and subclinical bulimic women, this coping style need not be as much of a focus
when treating subclinical bulimic women.

A second possible finding would be if emotion-oriented coping were found to
distinguish bulimic women from the remaining two groups, but was not found to
differentiate subclinical bulimic women from non-eating-disordered women. If this were
the case, then it could be argued that although emotion-oriented coping should be a
component in the treatment of bulimia nervosa, it need not be a focus during the
treatment of subclinical bulimia. Thus, the argument for tailored treatment programs
would once again be supported.

In contrast, support for the use of a general intervention program to treat both
subclinical bulimia and clinical bulimia could be provided if emotion-oriented coping
were found to differentiate clinical bulimic and subclinical bulimic women from non-
eating-disordered women, but was not found to distinguish the former two groups from
each other. If this were true, then one could conclude that although emotion-oriented
coping is an important variable to consider when developing treatment strategies for
individuals with eating disordered symptoms, it does not require the creation of distinct
interventions for subclinical bulimic women and clinical bulimic women. In other words,
emotion-oriented coping could be addressed in a general treatment program for women
with varying levels of bulimic symptomatology.

As seen in the above example, treatment recommendations for subclinical
bulimics may vary significantly, depending upon how the three groups differ from one
another on each of the seven variables. Results of the present study may illustrate the
treatment needs of subclinical bulimic women, and suggest if such needs differ in
important ways from those of clinical bulimic women. From such information, specific
recommendations for treatment are provided.

**Statement of Purpose**

1) The primary purpose of the present study was twofold:

a) To determine whether or not three different groups along a hypothesized continuum of
eating disturbance differed quantitatively in levels of perceived social support from
friends and family, in perceived stress, and in the coping strategies that they implement.

In order to build upon past research (e.g., Mintz & Betz, 1988; Scarano & Kalodner-
Martin, 1994), participants were classified in three categories previously used: i) non-
eating-disordered individual; ii) subclinical bulimic; and iii) clinical bulimic.

b) To develop Track 2 treatment guidelines (Kaldner & Scarano, 1992) for an intervention program tailored to the needs of young women suffering from bulimia at a subclinical level.

2) A secondary purpose of the study was to replicate previous findings regarding the relationships between degree of eating pathology and coping style (e.g., Koff & Sangani, 1997), perceived social support (e.g., Grissett & Norvell, 1992), and stress level (e.g., Troop et al., 1994), in a sample of undergraduate women.

**Hypotheses**

The following hypotheses were based upon previous findings concerning bulimia and coping style (e.g. Janzen et al., 1992; Koff & Sangani, 1997; Troop et al., 1994; Yager et al., 1995), as well as bulimia and perceived social support (e.g., Grissett & Norvell, 1992; Jacobson & Robins, 1989; Tiller et al., 1997). Further, the hypotheses were based upon past research in the area of the eating disorders continuum (e.g., Dancyger & Garfinkel, 1995; Hesse-Biber, 1992; Kalodner-Martin, 1994; Mintz & Betz, 1988).

1) It was hypothesized that non-eating-disordered women would report using active, task-oriented coping strategies more frequently than subclinical bulimic women, who in turn would report implementing task-oriented coping strategies more often than clinical bulimic women.

2) It was hypothesized that clinical bulimic women would report using emotion-oriented coping strategies more frequently than subclinical bulimic women, who in turn would
report utilizing these strategies more frequently than non-eating-disordered women.

3) It was hypothesized that clinical bulimic women would report using distraction as a coping strategy (a form of avoidance-oriented coping) more often than subclinical bulimic women, who in turn would implement distraction coping methods more frequently than non-eating-disordered women.

4) It was hypothesized that clinical bulimic women would report using social diversion as a coping strategy (a form of avoidance-oriented coping) more often than subclinical bulimic women, who in turn would implement social diversion coping methods more frequently than non-eating-disordered women.

5) It was hypothesized that clinical bulimic women would report less perceived social support from friends than subclinical bulimic women, who in turn would report less perceived social support from friends than non-eating-disordered women.

6) It was hypothesized that clinical bulimic women would report less perceived social support from family members than subclinical bulimic women, who in turn would report less perceived social support from family than non-eating-disordered women.

7) It was hypothesized that clinical bulimic women would report more perceived stress than subclinical bulimic women, who in turn would report more perceived stress than non-eating-disordered women.

8) It was hypothesized that level of eating disturbance among female undergraduates could be predicted based on the following variables: emotion-oriented coping, task-oriented coping, social diversion, distraction, perceived support from friends, perceived support from family, and perceived stress.
CHAPTER II

METHOD

Participants

Since approximately 90% of persons suffering from bulimia nervosa are female (DSM-IV, 1994), all participants in the present study were women. Participants were recruited from two settings: the University of Windsor in Windsor, Ontario and the Homewood Health Centre in Guelph, Ontario.

Student Sample

Participants in the overall student sample were 331 undergraduate women from the University of Windsor, the majority of whom were enrolled in introductory psychology classes (the remainder were recruited from various other psychology courses). All student volunteers received one bonus credit for their participation in the study. The participants ranged in age from 18 to 54 years old, with a mean age of 21.2 years (SD = 4.4).

All data from the overall student sample were examined. In addition, participants from the student sample who met specific criteria were selected for one of the two subgroups: a) the non-eating-disordered group; and b) the subclinical bulimic group.

a) Non-eating-disordered group

Participants in the non-eating-disordered group were 22 women from the student sample who reported no problems with eating disordered attitudes or behaviours (i.e., no binge-eating or use of compensatory behaviours reported) on either of two measures of eating disturbance. Specifically, the participants selected for this group were those who
received the lowest combined scores on the Bulimia Test-Revised (BULIT-R) and the Eating Attitudes Test-26 (EAT-26) and who did not report problems with binge-eating or compensatory behaviours on any of the two measures' items. Further, they could not report any history of either anorexia nervosa or bulimia nervosa. The mean score on the BULIT-R for this group was 31.1 (SD = 1.5) and the mean score on the EAT-26 was 1.5 (SD = 1.4).

b) **Subclinical Bulimic Group**

The subclinical bulimic group included 22 women from the student sample who were, by self-report, engaging in bulimic behaviours at a subclinical level (i.e., 7% of the total student sample). Specifically, to be classified as subclinical bulimic, participants had to receive a score of at least 85 on the BULIT-R and a score of at least 20 on the EAT-26. Further, participants had to indicate on the BULIT-R that they currently engaged in binge-eating and the use of compensatory behaviours (e.g., vomiting, laxative misuse, excessive exercise), but at a frequency of less than twice a week and/or for a duration of less than three months. The mean score on the BULIT-R was 97.8 (SD = 11.2), and the mean score on the EAT-26 was 32.5 (SD = 7.3). None of the participants from the student sample met the frequency and duration criteria for bulimia nervosa (based upon their responses on the BULIT-R).

**Patient Sample (Clinical Bulimic Group)**

Participants in the clinical bulimic group included 21 women who were recruited from the inpatient eating disorders program at the Homewood Health Centre in Guelph, Ontario. All women had been voluntarily admitted into the inpatient eating disorders
program within two weeks of participating in the study, and had all received a DSM-IV (1994) diagnosis of Bulimia Nervosa by a registered Psychologist. As part of the admission criteria into the program, none of the women were medically unstable or actively suicidal, and none suffered from alcohol/drug dependence. The mean score on the BULIT-R for this group was 115.8 (SD = 18.3), and the mean score on the EAT-26 was 45.5 (SD = 15.1).

According to the eating disorders program coordinator at Homewood Health Centre (A. Gates, personal communication, October 27, 2000), the bulimic clients admitted into the inpatient program tend to vary in terms of the chronicity of their symptoms. In particular, some individuals enter the program following years of outpatient treatment, while others enter due to a lack of outpatient services in their community. The bulimic clients seen at Homewood tend to present with a “complicated picture of purging”, and often report using several purging methods following a binge (e.g., laxative/diuretic misuse and vomiting). The rate of recidivism at Homewood has been found to be 11.8% over a five-year period for both bulimic and anorexic clients.

It should be noted that in the current study the number of participants selected for each group was largely based upon the size of the clinical bulimic group. The clinical bulimic group was relatively small, due to logistical constraints, such as time. That is, Homewood Health Centre admits new patients into its eating disorders program every few months, following each program’s completion. As a result, a year was required to recruit the current number of participants for the clinical bulimic group.
Materials

Demographic Questionnaire

All participants responded to questions about their age, height, weight, education level, ethnic background, current/previous treatment for psychological concerns, and current/previous diagnoses (see Appendix A).

Measuring Bulimic Symptomatology: The Bulimia Test-Revised

The Bulimia Test-Revised (BULIT-R; Thelen et al., 1991) is a 36-item, multiple choice self-report measure that was created to assess bulimia nervosa, using DSM-III-R criteria. Only 28 items are scored (the remaining 8, which relate to weight control behaviours, are unscored) (see Appendix B). The BULIT-R is the revised version of the 36-item Bulimia Test (BULIT; Smith & Thelen, 1984), which was developed to assess DSM-III defined bulimia. The BULIT was found to be a reliable and valid measure of bulimic symptomatology (e.g., Smith & Thelen, 1984; Welch & Hall, 1989). The BULIT was revised in order to accommodate the changes made in the criteria for bulimia nervosa in DSM-IV, including the addition of a minimum frequency for binge-eating (binge-eating twice a week for at least 3 months).

Each item on the BULIT-R is scored on a 5-point scale (1=no bulimic symptoms to 5=extreme bulimic symptoms). For research purposes, and to reduce the number of false negatives, a cut-off score of 85 is recommended to identify potential bulimics (Thelen et al., 1991). In order to prevent response bias, 18 items are reverse scored. Possible scores range from 28 to 145. Included in the BULIT-R are such items as, "I am afraid to eat anything for fear that I won't be able to stop", and "There are times when I
rapidly eat a very large amount of food". The BULIT-R has demonstrated high temporal stability, internal consistency, and various forms of validity in a number of studies (e.g., Breseeford, Hummel, & Barrios, 1992; Thelen et al., 1991). According to Thelen, Mintz, and Vander Wal (1996), "the BULIT-R has demonstrated validity with both clinically identified bulimic populations and nonclinical college female populations" (p.219).

In developing the BULIT-R, Thelen et al. (1991) utilized cross-validation techniques and the test-retest method in order to assess its psychometric properties. Specifically, the BULIT-R was completed by independent samples of 23 clinically identified bulimic women and 157 female college students (controls) in order to determine whether the BULIT-R could predict group membership. The results indicated that the BULIT-R has good predictive ability. When the BULIT-R was administered on two separate occasions to a sample of female college students, it was found to demonstrate high test-retest reliability over a two-month period ($r=95$). Internal consistency was also found to be high for the BULIT-R ($r=95$). Finally, when the correlations between the BULIT-R and two additional measures of bulimic symptomatology (i.e., the Binge Scale [Hawkins & Clement, 1980] and the BULIT) were assessed, the BULIT-R was found to correlate highly with these measures, suggesting good construct validity ($r=.85$ and $r=.99$, respectively).

In a study in which 39 undergraduate women completed the BULIT-R and used self-monitoring techniques to determine frequency of bulimic behaviours, BULIT-R scores were found to correlate significantly with the reported frequency of both binge eating ($r=.65$) and purging ($r=.60$), indicating an adequate level of construct validity.
Further, both test-retest reliability (r=.83) and internal consistency reliability (α=.93) were found to be high for the BULIT-R. Such findings suggest that the BULIT-R is a reliable and valid measure of bulimic symptomatology.

As noted above, the BULIT-R was developed using DSM-III-R criteria. Keeping in mind that "to date, there is no valid self-report measure of bulimia nervosa as it is defined in the DSM-IV" (Thelen et al., 1996, p.219), researchers have attempted to determine whether the BULIT-R can be considered a valid measure of DSM-IV defined bulimia nervosa (Thelen et al., 1996). Subjects included 23 clinically identified bulimic women and 124 female controls (i.e., 103 non-eating-disordered women and 21 women who met DSM-IV criteria for EDNOS), who completed the BULIT-R. The results indicated that the BULIT-R demonstrated high internal consistency (α=.98). The bulimic participants and the controls differed significantly in their total BULIT-R scores [t(57)=19.77, p<.0001]. Further, BULIT-R scores were found to predict group membership quite well (r=.73, p<.0001). Finally, the BULIT-R seemed able to distinguish between non-eating-disordered persons and those with an EDNOS. Such findings suggest that the BULIT-R may be used to assess bulimic symptomatology, as defined by the DSM-IV. According to Thelen et al., "Apparently, the criteria changes from the DSM-III-R to the DSM-IV were sufficiently small that they have no effect on the validity of the BULIT-R" (1996, p.221). Accordingly, the BULIT-R was used in the present study to determine degree of bulimic eating disturbance. Scores on the BULIT-R were calculated by first reversing the responses for certain items to their numerical opposites (for example, a response of 1 became a 5, a 5 became 1, etc.). A total score for
each participant was then determined by adding all of the values together.

**Measuring Eating Disordered Attitudes: The Eating Attitudes Test-26**

The Eating Attitudes Test (EAT-40; Garner & Garfinkel, 1979), is a 40-item, self-report measure which was developed to screen for attitudes and behaviours commonly associated with anorexia nervosa. Since it was initially developed, the EAT has been used extensively with bulimic subjects, and has been found to be a reliable measure that accurately discriminates between bulimic and non-eating-disordered individuals. For example, Gross, Rosen, Leitenberg, and Willmuth (1986) evaluated the criterion validity of the EAT in a bulimic sample. Criterion validity was assessed by determining the extent to which 20 bulimic women and 20 non-eating-disordered women differed on each subscale of the EAT. The results indicated that the two groups differed significantly in their scores on two of three subscales (i.e., dieting and bulimia/food preoccupation), as well as on the total scale. Thus, the EAT can accurately distinguish bulimic individuals from their non-eating-disordered peers.

Since the EAT was first introduced, a shortened, 26-item version of the measure has been developed, The Eating Attitudes Test-26 (EAT-26; Garner, Olmsted, Bohr, & Garfinkel, 1982) (see Appendix C). The 26 items of the shortened EAT were the result of a factor analysis of the initial EAT, which extracted three factors: dieting, bulimia and food preoccupation, and oral control. Of the 40 original items of the EAT, only 26 items were found to load significantly on the three factors. According to Garner et al. (1982), "the 14 items eliminated from the EAT-40 are redundant and do not increase the instrument's predictive capability" (p.874).
For each item on the EAT-26, there are six alternative responses: "never", "rarely", "sometimes", "often", "very often", and "always". Of the responses, the three least eating-disordered choices (i.e., never, rarely, sometimes) receive a score of 0, while the three most extreme eating-disordered responses receive scores ranging from 1 to 3 (i.e., often=1, very often=2, and always=3). A total score is determined by adding all of the item scores together. Scores may range from 0 to 78. Garner et al. (1982) have recommended a cut-off score of 20 and above be used to indicate potential eating pathology. Other researchers, however, have suggested that a slightly higher cut-off (such as a cut-off of 22) be used to reduce the number of false positives (e.g., Koslowsky et al., 1992; Scheinberg et al., 1993).

The EAT-26 has been found to be a reliable and valid version of the EAT (e.g., Berland, Thompson, & Linton, 1986), and correlates highly with the original measure (r=.98) (e.g., Garner, Olmsted, & Polivy, 1982). Further, when the EAT-26 was administered to restricter and bulimic anorexics, as well as to non-eating-disordered individuals, it was found to adequately predict group membership (Garner et al., 1982a). The psychometric properties of the EAT-26 have also been assessed in a nonclinical population (Koslowsky et al., 1992), where it was found to display adequate reliability (α=.83) and criterion validity [i.e., the EAT-26 significantly correlated with a measure assessing body image (r=.43)].

Both the EAT and the EAT-26 have been used (or recommended for use) in a variety of studies investigating the eating disorders continuum (e.g., Bunnel et al., 1990; Dancyger & Garfinkel, 1995; Scarano & Kalodner-Martin, 1994), and have also been
implemented in research studying eating disturbances and coping styles (e.g., Koff & Sangani, 1997). According to Koslowsky et al. (1992), "Although originally designed as a diagnostic tool to distinguish anorexics from normals, today the EAT is used for identifying subjects with various levels and types of eating disturbances" (p.28). In an attempt to maintain continuity with previous research in the area of the eating disorders continuum as well as in the area of eating disturbances and coping styles, the EAT-26 was used as a measure of eating-disordered attitudes and behaviours in the present study.

**Measuring Perceived Social Support: Perceived Support Scale (Friends and Family)**

Developed by Procidoano and Heller (1983), the Perceived Support Scale (PSS) is comprised of two 20-item subscales, which were created to measure perceived social support from family (PSS-Fa) and from friends (PSS-Fr) (see Appendix D). Each item on the PSS has three alternate responses: "Yes", "No", and "Don't know". Items include, "There is a friend I could go to if I were just feeling down, without feeling funny about it later", and "When I confide in members of my family, it makes me uncomfortable". Responses reflecting greater perceived social support receive a score of 1, whereas responses reflecting a lack of perceived social support receive a score of 0. Items that are answered with "Don't know" are not scored. A total score for each subscale is determined by adding the item scores together. Total scores may range from 0 (no perceived social support) to 20 (maximum social support). Procidoano and Heller (1983) conducted three validation studies in order to assess the psychometric properties of the PSS. The initial study involved development of the PSS-Fa and the PSS-Fr, as well as construct validation. Subjects included 222 college students, who were asked to complete
the PSS measures, as well as measures assessing social networks, life events, social competence, and symptomatology. High levels of internal consistency were found for both the PSS-Fr ($\alpha=.88$) and the PSS-Fa ($\alpha=.90$). Further, it was noted that the PSS-Fr and the PSS-Fa were negatively related to distress symptoms and psychopathology, and that both scales predicted symptomatology better than measures of social networks or life events. A factor analysis was conducted on the subscales, and the results indicated that each subscale seems to be comprised of a single factor.

The second validation study involved examining the possible influence that positive and negative attitudinal sets (i.e., positive and negative self-statements) could have upon individuals' perceptions of their adequacy of social support. Procidano and Heller sought to investigate the possibility that depression may lead to a perceived lack of support availability, rather than be caused by it. The researchers asked college students to complete the PSS-Fr and PSS-Fa, and then to return one week later and read either 60 positive self-statements or 60 negative self-statements, prior to completing the PSS measures a second time. The results indicated that the PSS-Fa was not affected by attitudinal set, whereas the PSS-Fr was somewhat affected by negative self-statements, with subjects in the negative attitudinal set condition reporting less perceived social support from friends than those in the positive attitudinal set condition. According to Procidano and Heller (1983), "perceptions of friends are more tenuous for college students since their friend networks are relatively new and subject to change" (p.13).

In the final study, the authors examined whether subjects and their friends and family members would display similar levels of comfort in their ability to self-disclose
with one another. Overall, the results provided further validation of the PSS measures. In particular, a significant relationship was found between subjects' reported willingness to self-disclose and the reported willingness of their siblings and of their friends. Further, when an experiment was conducted to verify this finding, the willingness to self-disclose was once again similar between subjects and their family members (no significant relationship was noted in the experiment for subjects and their friends).

In summary, the above studies indicate that the PSS is a reliable and valid measure of perceived social support from both friends and family, and that the PSS-Fr and the PSS-Fa are related but separate constructs. In addition to the validation studies conducted by Procídano and Heller (1983), the PSS has been used in a variety of investigations by other researchers (e.g., Sarason, Shearin, Pierce, & Sarason), including research which examined the relationship between perceived social support and bulimia nervosa (Grissett & Norvell, 1992). In order to build upon the findings of Grissett and Norvell (1992), the PSS was used in the present study as a measure of perceived social support from both friends and family.

**Measuring Coping Styles: Coping Inventory for Stressful Situations**

The Coping Inventory for Stressful Situations (CISS; Endler & Parker, 1990a, 1990b) is a 48-item, self-report inventory that includes three 16-item subscales: task-oriented coping, emotion-oriented coping, and avoidance-oriented coping (see Appendix E). The latter subscale is further divided into two subscales: social diversion (5 items) and distraction (8 items). Respondents are asked to "indicate how much they generally engage in various activities when encountering a difficult, stressful, or upsetting
situation" (Endler & Parker, 1994, p.51). Respondents use a 5-point response scale, with endpoints "1=not at all" and "5=very much". Raw scores for each of the subscales are determined by summing the values for subscale items, with higher scores suggesting higher usage of that coping orientation. In order to permit the direct comparison of scores on each of the scales, raw scores are converted into standardized T-scores, each with a mean of 50 and a standard deviation of 10. The T-scores are linear T-scores, and thus do not alter the distributions of the scale scores (Endler & Parker, 1990a). Interpretative guidelines list T-scores of 45 to 55 as Average, with scores above 66 as Much Above Average and score below 34 as Much Below Average.

The CISS was developed in an attempt to provide researchers with a reliable and valid measure of coping, since "many of the most frequently used coping scales suffer from...poor reliability, poor validity, inappropriate or incorrect use of factor-analytic techniques, [and] failure to cross-validate coping measures with different populations" (Endler & Parker, 1994, p.50). The CISS was developed in a series of studies, in which the psychometric properties of the CISS were repeatedly assessed (e.g., Endler & Parker, 1990a, 1990b, 1994). Several factor-analytic studies of the CISS involving different samples (i.e., college students, normal adults, adolescents, and psychiatric inpatients) have consistently revealed three major subscales: task-oriented coping, emotion-oriented coping, and avoidance-oriented coping. Further, two factors (i.e., social diversion and distraction) have repeatedly emerged when the avoidance subscale has been factor-analyzed. Such findings suggest that the factor structure of the CISS is quite stable, across diverse populations.
The CISS has also demonstrated good internal consistency in a variety of samples (internal reliability coefficients have ranged from the high 80s to the low 90s) (Endler & Parker, 1990a). Endler and Parker (1990a) found good test-retest reliability across a 6-week interval (correlations from .51 to .73 were found). Further, adequate construct validity was found when possible relationships between the CISS and two separate coping measures were examined (Endler & Parker, 1994). Evidence of construct-validity was also noted when the relationship between the subscales of the CISS and different measures of psychopathology were assessed (Endler & Parker, 1994). In particular, an inverse relationship was found between task-oriented coping and psychological distress, while a positive relationship was noted between emotion-oriented coping and psychological distress. Schwarzer and Schwarzer (1996) concluded that "the CISS is a state-of-the-art inventory based on stable factors that were replicated across various samples and that met the congruency test criteria" (p.121).

In summary, the CISS has repeatedly demonstrated high levels of reliability and validity. Further, the CISS has been used as a measure of coping in previous studies examining disordered eating and coping styles (e.g., Janzen et al., 1992; Koff & Sangani, 1997). Thus, in the present study, the CISS was used to assess coping strategies.

**Measuring Perceived Stress: Perceived Stress Scale**

The Perceived Stress Scale (Cohen, Kamarck, & Mermelstein, 1983), is a 14-item, self-report inventory, which was developed to assess the extent to which an individual appraises current life situations as stressful (see Appendix F). Respondents are asked to answer questions concerning their thoughts and feelings during the past month.
The response scale includes five points, with endpoints "0=never" and "4=very often". A total score is determined by reversing the scores on specific items, and then summing all of the items together. Examples of items include, "In the last month, how often have you felt confident about your ability to handle your personal problems?", and "In the last month, how often have you felt nervous and 'stressed'?".

The Perceived Stress Scale was developed in order to create a psychometrically sound measure of perceived stress, which could be used as an alternative to life-event scales. Cohen et al. (1983) argue that:

...the use of objective measures of stress implies that events are, in and of themselves, the precipitating cause of pathology...This implication is counter to the view that persons actively interact with their environments, appraising potentially threatening or challenging events in the light of available coping resources (p.37).

A series of validation studies was implemented to assess the psychometric properties of the Perceived Stress Scale, using two separate college student samples (N=332 and N=114) and one community sample, which included individuals participating in a smoking-cessation program (N=64). The Perceived Stress Scale was found to demonstrate good internal consistency in all three samples (alpha coefficients ranged from .84 to .86). Good test-retest reliability was also found across two-day (r=.85) and six-week (r=.55) intervals. In all three samples, evidence of concurrent validity for the Perceived Stress Scale was seen in significant correlations with several variables, including: physical symptoms, depressive symptoms, social anxiety, utilization of health
services, and number of stressful life events. Further, the Perceived Stress Scale was found to be a better predictor of these four variables than was a measure of stressful life-events (i.e., a modified version of the College Student Life-Event Scale).

As can be noted from the above studies, the Perceived Stress Scale is a reliable and valid measure of perceived stress. Further, the Perceived Stress Scale has been used successfully in previous research in conjunction with the Perceived Support Scale (e.g., Lafreniere, Ledgerwood, & Docherty, 1997). Thus, the Perceived Stress Scale was used in the present study as a measure of perceived stress.

**Procedure**

**Recruitment Procedures**

1) **Recruitment of students from the University of Windsor**

Participants from the University of Windsor were recruited using the psychology department's participant pool, which is comprised of undergraduate student volunteers. After receiving a list of randomly selected potential female volunteers, I contacted each on the telephone, provided a brief description of my study (i.e., basic rationale, length of study, number of bonus points they would receive, etc.), and answered any questions that they had. Those who agreed to participate arrived at a university classroom in groups at various scheduled times to complete the questionnaire package in a group administration. A consent form, which was distributed before the questionnaire package, reiterated in more detail what had been said (see Appendix G). Keeping in mind that eating disturbances are most common among young adults, a list of possible community referral sources was distributed with the consent form (see Appendix H). Those who completed
the consent form were then given the package of questionnaires.

Prior to completing the questionnaire, participants were told that any questions that they might have would be answered at any point during or after the study. Participants were informed that they could withdraw their participation at any time, and that any items that they chose not to answer could be skipped. Further, they were told that because they were not asked to put their names upon the questionnaire, their responses would remain anonymous. During the study, I answered any questions from participants about the questionnaires, and the experience in general.

2) Recruitment of patients from Homewood Health Centre

A letter of introduction (see Appendix I) was sent to the eating disorder program coordinator, which described the research, and stated the inclusion criteria for participants (i.e., bulimic participants had to have received a DSM-IV diagnosis of bulimia nervosa). The letter was followed up by two in-person meetings, in which the present author discussed the project in more detail with both the program coordinator and the staff Psychologist. Following ethics approval from Homewood Health Centre, the present author provided the Psychologist with questionnaire packages. Each package included a letter of introduction (see Appendix J), two copies of the consent form (see Appendix K), and a stamped, self-addressed envelope.

Within two weeks of being admitted, female clients who had received a diagnosis of bulimia nervosa were approached by a contact person about the study. Those who seemed interested in participating in the study were provided with the questionnaire package, and mailed the completed questionnaire on their own.
CHAPTER III

RESULTS

Organization of the Chapter

This chapter is composed of two main sections: a) results from analyses involving the three groups (i.e., non-eating-disordered, subclinical bulimic, and clinical bulimic); and b) results from analyses involving the entire student sample.

a) Grouped Data

Missing Data for Groups

The three groups initially included 68 women in total (i.e., 22 women in the non-eating-disordered group, 23 women in the subclinical bulimic group, and 23 women in the clinical bulimic group). However, missing data were noted on five questionnaires (one questionnaire from the subclinical bulimic group, and four questionnaires from the clinical bulimic group). For three of the questionnaires (including the one from the subclinical bulimic group), entire measures were left incomplete. Thus, these cases were deleted from analyses. The remaining two questionnaires contained only a few missing values each. It was decided that for these questionnaires the group mean for each missing value would be inserted, and that these cases would be retained for analyses.

Demographic Characteristics According to Group

Demographic characteristics [i.e., age, extent of postsecondary education, height, weight, Body Mass Index (BMI; kg/m²)] of the participants according to group designation (i.e., non-eating-disordered, subclinical bulimic, and clinical bulimic) are shown in Table 1, along with scores on the BULIT-R and the EAT-26. Within the non-eating-disordered
<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Non-Eating-Disordered (n=22)</th>
<th>Subclinical Bulimic (n=22)</th>
<th>Clinical Bulimic (n=21)</th>
<th>ANOVAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age in years</td>
<td>M 21.9</td>
<td>20.6</td>
<td>24.5</td>
<td>F(2,61) = 3.3, p = .04</td>
</tr>
<tr>
<td></td>
<td>SD 4.9</td>
<td>2.7</td>
<td>7.4</td>
<td></td>
</tr>
<tr>
<td>Height in inches</td>
<td>M 65.5</td>
<td>65.7</td>
<td>65.3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SD 3.1</td>
<td>3.2</td>
<td>2.7</td>
<td></td>
</tr>
<tr>
<td>Weight in pounds</td>
<td>M 132.5</td>
<td>145.1</td>
<td>121.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SD 16.8</td>
<td>22.4</td>
<td>20.9</td>
<td></td>
</tr>
<tr>
<td>Body Mass Index</td>
<td>M 21.7</td>
<td>23.7</td>
<td>19.8</td>
<td>F(2,58) = 8.9, p &lt; .001</td>
</tr>
<tr>
<td></td>
<td>SD 2.7</td>
<td>3.3</td>
<td>2.4</td>
<td></td>
</tr>
<tr>
<td>Post-secondary-education (years)</td>
<td>M 2.1</td>
<td>1.7</td>
<td>1.1</td>
<td>F(2,62) = 3.0, p = .06</td>
</tr>
<tr>
<td></td>
<td>SD 1.3</td>
<td>1.2</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td>Bulimia Test-Revised</td>
<td>M 31.1</td>
<td>97.8</td>
<td>115.8</td>
<td>F(2,62)=285.8, p&lt;.001</td>
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<td></td>
<td>SD 1.5</td>
<td>11.2</td>
<td>18.3</td>
<td></td>
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<td>Eating Attitudes Test-26</td>
<td>M 1.5</td>
<td>32.5</td>
<td>45.5</td>
<td>F(2,61)=121.6, p&lt;.001</td>
</tr>
<tr>
<td></td>
<td>SD 1.4</td>
<td>7.2</td>
<td>15.1</td>
<td></td>
</tr>
</tbody>
</table>
group, 82% of participants classified themselves as “Caucasian” (n=18), 14% as “Afro-Caribbean” (n=3), and 4% as “Other” (n=1; “Romanian”). In the subclinical bulimic group, 86% listed themselves as “Caucasian” (n=19), 4% as “Afro-Caribbean” (n=1), 4% as “Asian” (n=1), and 4% as “Other” (n=1; “Eastern European”). In the clinical bulimic group, 86% classified themselves as “Caucasian” (n=18), and 14% as “Other” (n=3; “Russian”, “Metis”, and “Prodiston”).

Participants in the non-eating-disordered group (n = 22) reported no past or present psychiatric hospitalizations or psychotropic drug usage, and no current involvement with psychotherapy or self-help groups. Two participants indicated that they had previously been involved in psychotherapy, and one reported previous involvement with a self-help group. One participant cited previous involvement with “other” forms of treatment (i.e., sports psychology), and one reported current involvement with other treatment (not specified). For the participants who reported past or present use of treatment for psychological concerns, total length of all treatments varied from 3 to 48 months (overall group \( M = 3.9, \text{SD} = 11.2 \)).

Within the subclinical bulimic group (n = 22), no current psychiatric hospitalization or psychotropic drug usage were reported. Two participants reported previous hospitalizations and previous use of medication. Two participants indicated that they were currently involved in psychotherapy. Current involvement with self-help groups was reported by two participants, and previous involvement was indicated by four participants. No past or present use of other forms of treatment was listed. Total length of involvement for all treatments combined varied from 3 months to 61 months (overall
Within the clinical bulimic group (n = 21), all participants reported current hospitalization, and eight participants indicated that they had also been hospitalized for psychiatric reasons in the past. Twelve participants reported currently receiving psychotropic medication, and eleven indicated past usage. Eight participants reported that they were currently involved in psychotherapy, and twelve cited previous involvement. Current involvement with self-help groups was reported by seven participants, and past involvement was reported by eight participants. Three indicated that they had received other forms of treatment in the past, including a psychoeducational group, meeting with a social worker, and rape counseling. Total length of involvement for all forms of treatment ranged from 6 months to 271 months (M = 68.6, SD = 73.2). The reasons cited for receiving treatment were quite diverse, and are shown according to group in Table 2. It should be noted that many participants listed more than one reason for having received treatment.

Data Screening for Grouped Data

The assumptions for multivariate analyses were evaluated using various data screening procedures (Tabachnick & Fidell, 1989). In order to check for multicollinearity and singularity, the bivariate correlations between the dependent variables were examined (see Table 3). A high correlation was noted between emotion-oriented coping and perceived stress (r = .81, p < .001). Correlations above .70 may indicate problems related to multicollinearity (Tabachnick & Fidell, 1989). It was therefore decided that these variables would be entered into separate analyses. The
Table 2

Reported Reasons for Seeking Psychological Treatment (Frequencies)

<table>
<thead>
<tr>
<th>Reason for Seeking Treatment (Past or Present)</th>
<th>Non-Eating Disordered (n=22)</th>
<th>Subclinical Bulimic (n=22)</th>
<th>Clinical Bulimic (n=21)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Bulimia</td>
<td>0</td>
<td>2</td>
<td>21</td>
</tr>
<tr>
<td>2) Anorexia</td>
<td>0</td>
<td>2</td>
<td>15</td>
</tr>
<tr>
<td>3) Depression</td>
<td>0</td>
<td>2</td>
<td>15</td>
</tr>
<tr>
<td>4) Anxiety</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>5) Obsessive-Compulsive Disorder</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>6) Post-Traumatic Stress Disorder</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>7) Manic Depression</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>8) Substance abuse</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>9) Paranoia</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>10) Abusive history</td>
<td>2</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>11) Divorce of parents</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>12) Death of parent(s)</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>13) Stress</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>14) Compulsive overeating</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>15) Confidence building</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
### Table 3

**Pearson Product-Moment Correlations Among Variables**

<table>
<thead>
<tr>
<th>Variables</th>
<th>BMI</th>
<th>Treatment</th>
<th>TASK</th>
<th>EMOT</th>
<th>DISTRA</th>
<th>SOCDIV</th>
<th>PSS-Fr</th>
<th>PSS-Fa</th>
<th>PerSS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMI</td>
<td>------</td>
<td>-.34**</td>
<td>.18</td>
<td>-.06</td>
<td>.26*</td>
<td>.28*</td>
<td>.11</td>
<td>.13</td>
<td>-.18</td>
</tr>
<tr>
<td>Treatment</td>
<td>------</td>
<td>-.31*</td>
<td>.31**</td>
<td>.06</td>
<td>-.16</td>
<td>-.36**</td>
<td>-.23</td>
<td>.30*</td>
<td></td>
</tr>
<tr>
<td>Task-oriented coping (CISS scale—TASK)</td>
<td>------</td>
<td>-.61**</td>
<td>-.13</td>
<td>.35**</td>
<td>.36**</td>
<td>.45**</td>
<td>-.65**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotion-oriented coping (CISS scale—EMOT)</td>
<td>------</td>
<td>.41**</td>
<td>-.23</td>
<td>-.46**</td>
<td>-.40**</td>
<td>.81**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distraction (CISS subscale—DISTRA)</td>
<td>------</td>
<td>.28**</td>
<td>-.29*</td>
<td>-.06</td>
<td></td>
<td>.34**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Diversion (CISS subscale—SOCDIV)</td>
<td>------</td>
<td>.31*</td>
<td>.28*</td>
<td>-.20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Support Scale (Friends—PSS-Fr)</td>
<td>------</td>
<td>.52**</td>
<td>-.40**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Support Scale (Family—PSS-Fa)</td>
<td>------</td>
<td></td>
<td></td>
<td>-.43**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Stress Scale (PerSS)</td>
<td>------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note.** * = p<.05. ** = p<.01.
assumptions for linearity, normality, and homogeneity of variance-covariance matrices were also evaluated, and found to be satisfactory. Internal consistency reliability for each measure was assessed, according to group, and found to be adequate, with most alpha coefficients falling in the .80 to .95 range (see Appendix L).

**Potential Covariates**

Prior to conducting the main analyses, a series of one-way between subjects analyses of variance (ANOVA) were performed, to determine whether or not significant group differences could be found for the following variables: age, BMI, and education level. In order to control for Type 1 Error, the alpha level for each analysis was set at the .01 level.

An ANOVA indicated that the groups differed significantly in terms of BMI, F(2, 58) = 8.9, p < .001. Post hoc Bonferroni comparisons revealed that the clinical bulimic group (M = 19.8, SD = 2.4) had significantly lower BMI scores than the subclinical bulimic group (M = 23.7, SD = 3.3), but did not have significantly lower BMI scores than the non-eating-disordered group (M = 21.7, SD = 2.7). The subclinical bulimic group and the non-eating-disordered group were not found to differ significantly according to BMI. There were no significant group differences noted for age, F(2,61) = 3.3, p = .04, or education level, F(2,62) = 3.0, p = .06.

It should be noted that the groups also differed significantly in terms of total length of psychological treatment, F(2,61) = 15.0, p < .001. Post hoc Bonferroni comparisons indicated that the clinical bulimic group (M = 68.6, SD = 73.2) had been involved in psychological treatment for a significantly longer time (in months) than either
the subclinical bulimic group (M = 8.0, SD = 16.0) or the non-eating-disordered group (M = 3.9, SD = 11.2). No significant differences were noted between the non-eating-disordered group and the subclinical bulimic group.

The variable “total length of treatment” was created for each participant by summing together the duration of every reported treatment, many of which may have been used concurrently. It likely that certain treatments were used simultaneously (e.g., psychotropic medication and psychotherapy), particularly by women in the clinical bulimic group. Keeping this in mind, it is possible that the significant difference noted between groups was somewhat inflated. Thus, it was decided that total length of treatment would not be considered as a possible covariate in group comparisons.

In order to determine whether or not BMI was significantly correlated with the dependent variables bivariate correlations between all variables were examined (see Table 3). As noted in Table 3, BMI was found to be significantly correlated with the following dependent variables, social diversion (r = .28, p = .03), and distraction (r = .26, p = .04). Thus, BMI was entered as a covariate in group comparisons involving coping styles.

**Coping Styles**

**Multivariate Analysis of Covariance**

As noted above, BMI was found to differ significantly between groups and was found to be significantly correlated with certain coping variables. A multivariate analysis of covariance (MANCOVA) was conducted, with group designation as the factor, emotion-oriented coping, task-oriented coping, distraction, and social diversion as
the dependent variables, and BMI as the covariate.

Using Wilks' Lambda as the criterion, analysis of the data revealed a lack of significance between the set of dependent variables and the covariate, $F(4, 54) = .92, p = .34$. Further, the covariate was not found to provide any adjustment to any of the dependent variables. It was therefore decided that BMI would be omitted from subsequent analyses, and that a multivariate analysis of variance (MANOVA) would be conducted instead.

**Multivariate Analysis of Variance**

In order to determine whether or not differences existed between the three groups (i.e., clinical bulimic, subclinical bulimic, and non-eating-disordered) according to task-oriented coping, emotion-oriented coping, distraction, and social diversion, a MANOVA was conducted (see Table 4 for means and standard deviations for each variable, and Table 5 for interpretation of CISS T-scores). Using Wilks' Lambda as the criterion, significant differences were noted between groups, $F(8, 118) = 8.35, p < .001$.

In order to determine the impact of group designation on the individual dependent variables, a series of ANOVAs were conducted, with alpha level set at .01. Significant differences were found for emotion-oriented coping, $F(2, 62) = 35.01, p < .001$, task-oriented coping, $F(2, 62) = 11.81, p < .001$, and distraction, $F(2, 62) = 6.03, p < .01$. Only social diversion was found to be nonsignificant, $F(2, 62) = 3.25, p = .05$.

**Perceived Social Support**

**Multivariate Analysis of Variance**

In order to determine whether or not differences existed between the three groups
<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Non-Eating-Disordered (n=22)</td>
</tr>
<tr>
<td>Task-oriented coping (T-score)</td>
<td>M 53.4</td>
</tr>
<tr>
<td></td>
<td>SD 9.6</td>
</tr>
<tr>
<td>Emotion-oriented coping (T-score)</td>
<td>M 46.9</td>
</tr>
<tr>
<td></td>
<td>SD 8.7</td>
</tr>
<tr>
<td>Distraction (T-score)</td>
<td>M 46.0</td>
</tr>
<tr>
<td></td>
<td>SD 10.5</td>
</tr>
<tr>
<td>Social Diversion (T-score)</td>
<td>M 52.2</td>
</tr>
<tr>
<td></td>
<td>SD 12.0</td>
</tr>
<tr>
<td>Perceived Support-Friends</td>
<td>M 17.2</td>
</tr>
<tr>
<td></td>
<td>SD 2.9</td>
</tr>
<tr>
<td>Perceived Support-Family</td>
<td>M 14.5</td>
</tr>
<tr>
<td></td>
<td>SD 6.4</td>
</tr>
<tr>
<td>Perceived Stress</td>
<td>M 19.8</td>
</tr>
<tr>
<td></td>
<td>SD 9.4</td>
</tr>
<tr>
<td>Score</td>
<td>Range</td>
</tr>
<tr>
<td>----------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Below 30</td>
<td>Very much below average</td>
</tr>
<tr>
<td>30 to 34</td>
<td>Much below average</td>
</tr>
<tr>
<td>35 to 39</td>
<td>Below average</td>
</tr>
<tr>
<td>40 to 44</td>
<td>Slightly below average</td>
</tr>
<tr>
<td>45 to 55</td>
<td>Average</td>
</tr>
<tr>
<td>56 to 60</td>
<td>Slightly above average</td>
</tr>
<tr>
<td>61 to 65</td>
<td>Above average</td>
</tr>
<tr>
<td>66 to 70</td>
<td>Much above average</td>
</tr>
<tr>
<td>Above 70</td>
<td>Very much above average</td>
</tr>
</tbody>
</table>
according to perceived support from friends and perceived support from family, a MANOVA was conducted. Using Wilks’ Lambda as the criterion, significant differences were noted between groups, $F(4, 122) = 5.35, p < .001$. In order to determine the impact of group designation on the individual dependent variables, two ANOVAs were conducted. Significant group differences were found for both perceived support from friends, $F(2, 62) = 10.73, p < .001$, and perceived support from family, $F(2, 62) = 5.24, p < .01$.

**Perceived Stress**

**Analysis of Variance**

In order to determine whether or not differences existed between the three groups according to perceived stress, an ANOVA was conducted. Significant differences were noted between groups, $F(2, 62) = 34.48, p < .001$.

**Hypothesis Testing**

To determine which groups differed from one another on what variables, a series of planned comparisons were conducted, based on the hypotheses for the current study (see Figure 1 for a graphic illustration of differences between groups). However, because more comparisons were planned than there were degrees of freedom for effect, it was necessary to make an adjustment, to control for Type 1 error (Tabachnick & Fidell, 1989). The Scheffé test for adjusting critical F was used (a test commonly used for post hoc comparisons), due to its level of conservatism, and its flexibility for conducting numerous comparisons (Tabachnick & Fidell, 1989).
Figure 1. A graphical depiction of the differences noted between groups for each variable. N = non-eating-disordered group; SB = subclinical bulimic group; CB = clinical bulimic group. ——> = significant differences between groups. —— = no significant differences between groups.
Hypothesis 1

The non-eating-disordered group was expected to report using task-oriented coping strategies more frequently than the subclinical bulimic group (as evidenced by higher scores on the task-oriented coping subscale). The subclinical bulimic group was expected to report using task-oriented coping strategies more often than the clinical bulimic group. This hypothesis was only partially supported. Using the Scheffe test, results of comparisons revealed that the non-eating-disordered group ($M = 53.4$, $SD = 9.6$) obtained significantly higher scores on the task-oriented coping subscale than the subclinical bulimic group ($M = 44.8$, $SD = 12.5$) ($p = .04$). No significant differences were noted between the subclinical bulimic group and the clinical bulimic group ($M = 36.7$, $SD = 11.6$) ($p = .07$). A post hoc comparison revealed significant differences between the clinical bulimic group and the non-eating-disordered group ($p < .001$).

Hypothesis 2

The clinical bulimic group was expected to report using emotion-oriented coping strategies more frequently than the subclinical bulimic group (i.e., have higher scores on the emotion-oriented coping subscale). The subclinical bulimic group was expected to report using emotion-oriented coping strategies more often than the non-eating-disordered group. This hypothesis was supported. Results of planned comparisons indicated that the clinical bulimic group ($M = 66.9$, $SD = 6.2$) obtained significantly higher scores on the emotion-oriented coping subscale than the subclinical bulimic group ($M = 60.7$, $SD = 8.9$) ($p < .05$). Significant differences in the expected direction were also noted between the subclinical bulimic group and the non-eating-disordered group ($M$
= 46.9, SD = 8.7) (p < .001).

**Hypothesis 3**

The clinical bulimic group was expected to report using distraction more often than the subclinical bulimic group. The subclinical bulimic group was expected to report using distraction more frequently than the non-eating-disordered group. This hypothesis was only partially supported. No significant differences were observed between the clinical bulimic group (M = 52.6, SD = 11.2) and the subclinical bulimic group (M = 57.3, SD = 10.9) (p=.37). Significant differences in the expected direction were noted between the subclinical bulimic group and the non-eating-disordered group (M = 46.0, SD = 10.5) (p < .01). A post hoc comparison indicated that no significant differences existed between the non-eating-disordered group and the clinical bulimic group (p = .14).

**Hypothesis 4**

The clinical bulimic group was expected to report using social diversion as a coping strategy more often than the subclinical bulimic group. The subclinical bulimic group was expected to report using social diversion as a coping strategy more often than the non-eating-disordered group. This hypothesis was not supported. Results of comparisons indicated that no significant differences existed between the clinical bulimic group (M = 43.7, SD = 10.3) and the subclinical bulimic group (M = 49.7, SD = 11.0) (p = .22), or between the subclinical bulimic group and the non-eating-disordered group (M = 52.2, SD = 12.0) (p=.76). A post hoc comparison revealed significant differences between the clinical bulimic group and the non-eating-disordered group (p < .05), but not in the expected direction.
Hypothesis 5

The non-eating-disordered group was expected to report more perceived support from friends than subclinical bulimic group. The subclinical bulimic group was expected to report more perceived support from friends than the clinical bulimic group. This hypothesis was partially supported. Results of comparisons revealed that no significant differences existed between the non-eating-disordered group (\( M = 17.2, \text{SD} = 2.9 \)) and the subclinical bulimic group (\( M = 14.7, \text{SD} = 4.1 \)) (\( p = .16 \)). Significant differences in the expected direction were noted between the subclinical bulimic group and the clinical bulimic group (\( M = 11.2, \text{SD} = 5.3 \)) (\( p < .05 \)). Significant differences were also noted in a post hoc comparison between the clinical bulimic group and the non-eating-disordered group (\( p < .001 \)), with the latter reporting more perceived support from friends.

Hypothesis 6

The non-eating-disordered group was expected to report more perceived support from family than the subclinical bulimic group. The subclinical bulimic group was expected to report more perceived support from family than the clinical bulimic group. This hypothesis was not supported. Results of comparisons revealed that no significant differences existed between the non-eating-disordered group (\( M = 14.5, \text{SD} = 6.4 \)) and the subclinical bulimic group (\( M = 12.1, \text{SD} = 6.2 \)) (\( p = .49 \)), or between the subclinical bulimic group and the clinical bulimic group (\( M = 8.1, \text{SD} = 6.8 \)) (\( p = .14 \)). Interestingly, a post hoc comparison revealed significant differences between the non-eating-disordered group and the clinical bulimic group (\( p < .01 \)), with the non-eating-disordered group reporting more perceived support from family.
**Hypothesis 7**

The clinical bulimic group was expected to report higher levels of perceived stress than the subclinical bulimic group. The subclinical bulimic group was expected to report higher levels of perceived stress than the non-eating-disordered group. This hypothesis was supported. Results of planned comparisons indicated that the clinical bulimic group ($M = 40.5$, $SD = 6.6$) reported significantly higher scores on the perceived stress scale than the subclinical bulimic group ($M = 30.7$, $SD = 8.1$) ($p = .001$). Significant differences in the expected direction were also noted between the subclinical bulimic group and the non-eating-disordered group ($M = 19.8$, $SD = 9.4$) ($p < .001$).

**b) Student Sample**

**Demographic Characteristics of the Total Student Sample**

The overall student sample was comprised of 338 female undergraduate students. However, seven questionnaires were incomplete, and these cases were deleted. Thus, 331 cases were retained for analysis. The 331 participants ranged in age from 18 to 54 years old, with a mean age of 21.2 years ($SD = 4.4$). Length of time registered as a university student varied from one year to five years, with the mean number of years being 1.8 ($SD = 1.1$). Within the total student sample, 73% of participants classified themselves as “Caucasian” (n=265), 6.6% as “Afro-Caribbean” (n=24), 7.2% as “Asian” (n=26), 0.6% as “First Nations” (n=2), and 3.9% as “Other” (n=13) (see Table 6). Self-reported weight in the sample ranged from 90 pounds to 250 pounds, with a mean weight of 138.4 pounds ($SD = 25.0$). Height ranged from 54 inches to 73 inches ($M = 65.2$; $SD = 2.8$). A Body Mass Index (BMI) was calculated for each participant, and was
Table 6

Other Ethnic Backgrounds Listed by University Sample (N=331)

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chinese-Dutch</td>
<td>1</td>
</tr>
<tr>
<td>Romanian</td>
<td>1</td>
</tr>
<tr>
<td>African/Indian</td>
<td>1</td>
</tr>
<tr>
<td>West Indian</td>
<td>1</td>
</tr>
<tr>
<td>Asian-Caucasian</td>
<td>1</td>
</tr>
<tr>
<td>Pakistani (East Indian)</td>
<td>1</td>
</tr>
<tr>
<td>Eastern European</td>
<td>1</td>
</tr>
<tr>
<td>Afro-Caribbean &amp; Asian</td>
<td>1</td>
</tr>
<tr>
<td>Lebanese</td>
<td>1</td>
</tr>
<tr>
<td>Jordanian</td>
<td>1</td>
</tr>
<tr>
<td>Chaldean</td>
<td>1</td>
</tr>
<tr>
<td>Arabic</td>
<td>1</td>
</tr>
<tr>
<td>Canadian Indian/Dutch</td>
<td>1</td>
</tr>
</tbody>
</table>
found to range from 16.3 to 39.0 (M = 22.8; SD = 3.9).

Five of the student participants reported past inpatient hospital stays for psychological concerns, with none indicating current hospitalization. Fourteen participants reported having been prescribed psychiatric medications in the past, and one reported that she had a current prescription for such medication. Twenty-nine participants indicated that they had received psychotherapy services in the past, and eight reported being currently involved in psychotherapy. Nineteen participants cited past involvement in a self-help/support group, and four reported current involvement. Eight participants indicated that they had used some other form of psychological treatment in the past, and two reported that they were currently involved in another type of treatment. Treatments listed under “Other” included: bereavement counselling, sport psychology, self-esteem group, help from a family physician, marital counselling, and taking St. John’s Wort Herbal Supplement. The reasons cited for receiving any of the above treatments were diverse, and ranged from an abusive history (n=3) to depression (n=9) (see Table 7).

Predicting Disordered Eating in the Student Sample: Results of the Multiple Regression Analysis

A secondary purpose of the present study was to investigate whether or not the level of disordered eating among undergraduate women is related to: a) their level of perceived support from friends and from family; b) their level of perceived stress; and c) their tendency to utilize emotion-oriented coping strategies, task-oriented coping strategies, and two forms of avoidance-oriented coping strategies [i.e., via social
<table>
<thead>
<tr>
<th>Reason for Seeking Treatment</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>9</td>
</tr>
<tr>
<td>Anorexia</td>
<td>3</td>
</tr>
<tr>
<td>Abusive history</td>
<td>3</td>
</tr>
<tr>
<td>Bereavement</td>
<td>3</td>
</tr>
<tr>
<td>Anxiety</td>
<td>2</td>
</tr>
<tr>
<td>Bulimia</td>
<td>2</td>
</tr>
<tr>
<td>Divorce of parents</td>
<td>2</td>
</tr>
<tr>
<td>Stress</td>
<td>1</td>
</tr>
<tr>
<td>Eating Disorder (unspecified)</td>
<td>1</td>
</tr>
<tr>
<td>Attention Deficit Disorder</td>
<td>1</td>
</tr>
<tr>
<td>Substance abuse</td>
<td>1</td>
</tr>
<tr>
<td>Family problems</td>
<td>1</td>
</tr>
</tbody>
</table>
diversion and via distraction]. In order to assess level of disordered eating, each respondent’s score on the BULIT-R was used. The decision to use the BULIT-R rather than the EAT-26 was based largely on the fact that the BULIT-R is a comprehensive measure designed specifically to assign level of bulimic pathology (the focus of the current study), whereas the EAT-26 is not. Scores on the BULIT-R ranged from 28 to 120 (M = 51.10), with higher values indicating higher levels of eating pathology (see Table 8).

In order to determine whether scores on the BULIT-R could be predicted from scores on the Perceived Support Scale subscales (i.e., Friends and Family), the Perceived Stress Scale, and the four CISS subscales (i.e., task-oriented coping, emotion-oriented coping, distraction, and social diversion), a standard multiple regression analysis was performed.

Examination of the casewise plots for standardized residuals revealed five outliers (see Table 9). These cases were deleted, and the analysis was rerun. Following the second multiple regression analysis, the residual scatterplots were examined, and the assumptions of normality, linearity, and homoscedasticity were found to have been met.

In order to further check for normality of data, the normal probability plot was also examined. Observations approximated a line, suggesting normality of data. Internal consistency reliability for each measure was assessed, and found to be satisfactory, with alpha coefficients ranging from .78 (Distraction subscale from CISS) to .92 (Perceived Support Scale-Family)(see Appendix M).

Multicollinearity and singularity were checked for by inspecting the bivariate
Table 8

The Range of Scores and Mean Score for Each Scale

<table>
<thead>
<tr>
<th>Measure</th>
<th>Possible Range</th>
<th>Actual Range</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulimia Test-Revised</td>
<td>28-145</td>
<td>28-120</td>
<td>51.10</td>
<td>18.67</td>
</tr>
<tr>
<td>Eating Attitudes Test-26</td>
<td>0-78</td>
<td>0-47</td>
<td>10.12</td>
<td>9.66</td>
</tr>
<tr>
<td>Perceived Support Scale (Friends)</td>
<td>0-20</td>
<td>1-20</td>
<td>16.33</td>
<td>3.83</td>
</tr>
<tr>
<td>Perceived Support Scale (Family)</td>
<td>0-20</td>
<td>0-20</td>
<td>14.11</td>
<td>5.66</td>
</tr>
<tr>
<td>Perceived Stress Scale</td>
<td>0-56</td>
<td>5-50</td>
<td>26.33</td>
<td>8.00</td>
</tr>
<tr>
<td>Task-oriented Coping (CISS scale)</td>
<td>25-75</td>
<td>25-75</td>
<td>48.86</td>
<td>10.83</td>
</tr>
<tr>
<td>Emotion-oriented coping (CISS scale)</td>
<td>25-75</td>
<td>31-75</td>
<td>53.94</td>
<td>9.59</td>
</tr>
<tr>
<td>Avoidance-oriented coping (CISS scale)</td>
<td>25-75</td>
<td>26-75</td>
<td>55.07</td>
<td>9.92</td>
</tr>
<tr>
<td>Distraction*</td>
<td>25-75</td>
<td>28-75</td>
<td>52.68</td>
<td>10.40</td>
</tr>
<tr>
<td>Social Diversion*</td>
<td>25-75</td>
<td>25-68</td>
<td>54.02</td>
<td>9.72</td>
</tr>
</tbody>
</table>

Note. All CISS scale scores are T-scores. * = subscale of the Avoidance-oriented coping Scale of the CISS.
<table>
<thead>
<tr>
<th>Case Number</th>
<th>Predicted BULIT-R Score</th>
<th>Actual BULIT-R Score</th>
<th>Residual</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>59.76</td>
<td>120.0</td>
<td>60.24</td>
</tr>
<tr>
<td>71</td>
<td>42.84</td>
<td>97.0</td>
<td>54.16</td>
</tr>
<tr>
<td>87</td>
<td>42.81</td>
<td>99.0</td>
<td>56.19</td>
</tr>
<tr>
<td>229</td>
<td>55.43</td>
<td>109.0</td>
<td>53.56</td>
</tr>
<tr>
<td>233</td>
<td>59.73</td>
<td>119.0</td>
<td>59.27</td>
</tr>
</tbody>
</table>
correlations between each variable in the equation (see Table 10). All of the correlations were lower than .70 (bivariate correlations above .70 may indicate problems related to multicollinearity) (Tabachnick & Fidell, 1989). Further, the values of tolerance for each variable were examined (see Table 11), and found to be reasonably high, suggesting that a considerable amount of each variable's variance was not accounted for by other variables in the equation.

Analysis of the data indicated that the model was adequate at predicting BULIT-R scores, $F(7,318)=16.55$, $p<.001$. Further analysis revealed that 4 of the 7 variables in the equation were significant in predicting scores on the BULIT-R (see Table 11). Specifically, as predicted, it was found that scores on the Emotion-oriented coping scale, $t(318)=3.91$, $p<.001$, the Distraction subscale, $t(318)=3.65$, $p<.001$, and the Perceived Stress Scale, $t(318)=2.13$, $p<.05$, were significant in predicting BULIT-R scores. The Social Diversion subscale also predicted BULIT-R scores, but not in the expected direction (was a negative predictor), $t(318)=-3.14$, $p=.002$. Perceived support from friends, perceived support from family, and task-oriented coping did not significantly predict overall level of disordered eating.
Table 10

Correlations Between Variables in the Equation (N=326)

<table>
<thead>
<tr>
<th>Variables</th>
<th>BULIT-R</th>
<th>PSS-Fr</th>
<th>PSS-Fa</th>
<th>EMOT</th>
<th>TASK</th>
<th>SOCDIV</th>
<th>DISTRA</th>
<th>PerSS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BULIT-R</td>
<td>--------</td>
<td>-.20</td>
<td>-.19</td>
<td>.42</td>
<td>-.27</td>
<td>-.14</td>
<td>.24</td>
<td>.41</td>
</tr>
<tr>
<td>Perceived Support Scale (Friends—PSS-Fr)</td>
<td>--------</td>
<td>.35</td>
<td>-.20</td>
<td>.19</td>
<td>.31</td>
<td>.01</td>
<td>.24</td>
<td>.41</td>
</tr>
<tr>
<td>Perceived Support Scale (Family—PSS-Fa)</td>
<td>--------</td>
<td>-.30</td>
<td>.24</td>
<td>.17</td>
<td>-.06</td>
<td>-.35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotion-oriented coping (CISS scale—EMOT)</td>
<td>--------</td>
<td>-.31</td>
<td>.01</td>
<td>.26</td>
<td>.64</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Task-oriented coping (CISS scale—TASK)</td>
<td>--------</td>
<td>.18</td>
<td>-.04</td>
<td>.44</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Diversion (CISS subscale—SOCDIV)</td>
<td>--------</td>
<td>.36</td>
<td>-.07</td>
<td>.23</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distraction (CISS subscale—DISTRA)</td>
<td>--------</td>
<td>.23</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Stress Scale (PerSS)</td>
<td>--------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 11

**Standard Multiple Regression Analysis for Variables Predicting Level of Disordered Eating (N=326)**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Tolerance</th>
<th>B</th>
<th>SE</th>
<th>Beta</th>
<th>t-value</th>
<th>sr²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Support Scale (Friends)</td>
<td>.79</td>
<td>-.26</td>
<td>.25</td>
<td>-.06</td>
<td>-1.06</td>
<td>Negligible</td>
</tr>
<tr>
<td>Perceived Support Scale (Family)</td>
<td>.79</td>
<td>-.03</td>
<td>.16</td>
<td>.01</td>
<td>-0.21</td>
<td>Negligible</td>
</tr>
<tr>
<td>Emotion-oriented coping (CISS scale)</td>
<td>.57</td>
<td>.45</td>
<td>.12</td>
<td>.25</td>
<td>3.91**</td>
<td>.05</td>
</tr>
<tr>
<td>Task-oriented coping (CISS scale)</td>
<td>.78</td>
<td>-.13</td>
<td>.09</td>
<td>-.08</td>
<td>-1.52</td>
<td>Negligible</td>
</tr>
<tr>
<td>Social diversion++</td>
<td>.75</td>
<td>-.31</td>
<td>.10</td>
<td>-.17</td>
<td>-3.14**</td>
<td>.03</td>
</tr>
<tr>
<td>Distraction++</td>
<td>.78</td>
<td>.33</td>
<td>.09</td>
<td>.20</td>
<td>3.65**</td>
<td>.04</td>
</tr>
<tr>
<td>Perceived Stress Scale</td>
<td>.50</td>
<td>.31</td>
<td>.15</td>
<td>.14</td>
<td>2.13*</td>
<td>.01</td>
</tr>
</tbody>
</table>

**Note.** ++ = subscale of the Avoidance-oriented coping Scale of the CISS. * = p< .05.

** = p< .01. sr² = squared semipartial correlation coefficients. R² = .27.
CHAPTER IV

DISCUSSION

Differences Between Non-eating-disordered Women, Subclinical Bulimic Women, and Clinical Bulimic Women

The primary purpose of the current study was to determine whether or not a group of clinical bulimic women, a group of subclinical bulimic women, and a group of non-eating-disordered women differed from one another in terms of coping styles, perceived support from friends and from family, and perceived stress.

Coping Styles

Hypothesis 1 stated that non-eating-disordered women would report more frequent use of task-oriented coping compared to subclinical bulimic women, who would report using task-oriented coping more often than clinical bulimic women. This hypothesis was only partially supported by the current data. Although significant differences were found between the non-eating-disordered group and the subclinical bulimic group, no significant differences were noted between the subclinical bulimic group and the clinical bulimic group. Post hoc comparisons also revealed differences between the clinical bulimic group and the non-eating-disordered group, with the latter reporting greater use of task-oriented coping. Task-oriented coping has been described as purposeful, problem-focused attempts at solving a problem or altering a situation (Endler & Parker, 1990a).

Task-oriented coping may be a variable that differentiates individuals with eating pathology from those without, regardless of degree. In other words, women who engage
in bulimic behaviour may utilize task-oriented coping strategies less often when faced with a stressor than those who do not engage in bulimic behaviour. The current results are similar to those of Janzen et al. (1992), who found task-oriented coping to be related to bulimic symptomatology in a nonclinical college sample.

The fact that no significant differences existed between subclinical bulimic women and clinical bulimic women in the current study suggests that the failure to use task-oriented coping when faced with stressors may be a pre-existing characteristic of bulimic women, rather than a result of bulimia nervosa. In other words, perhaps women who are less likely to use active, problem-focused coping strategies are also more likely to use other nondirective, non-problem-oriented behaviours (such as binge-eating and purging), in order to relieve distress. Shatford and Evans (1986) observed that, “Symptom choice for bulimics may occur through the serendipitous association between binge eating and/or vomiting with managing stressful situations” (p.452). It should be underscored, however, that no firm conclusions or causal statements can be drawn from the results, due to the nature of the study (i.e., cross-sectional rather than prospective design; no random assignment to groups).

What can be concluded from the current results is that women who report bulimic symptomatology also report utilizing task-oriented coping less frequently than non-eating-disordered women. This finding highlights the importance of educating women with bulimic tendencies about the appropriate use of active, problem-focused coping strategies. It may also be wise to include such instruction in prevention programs.

Although the difference in use of task-oriented coping between the subclinical
bulimic group and the clinical bulimic group was not significant, it did approach significance \( p = .07 \). The difference may have been significant had sample sizes been larger.

Hypothesis 2 was supported. Specifically, clinical bulimic women reported using emotion-oriented coping strategies more frequently than subclinical bulimic women, who reported using emotion-oriented coping more often than non-eating-disordered women. These findings are similar to those noted in previous studies (e.g., Denisoff & Endler, 2000; Janzen et al., 1992; Koff & Sangani, 1997; Mayhew & Edelmann, 1989; Shatford & Evans, 1986; Soukup et al., 1990).

The finding that emotion-oriented coping distinguishes the groups quantitatively, with use increasing incrementally across groups, lends support to the continuum hypothesis. The observation that the reported mean frequency for implementing emotion-oriented coping strategies was “above average” for subclinical bulimic women and “much above average” for clinical bulimic women suggests that coping skills training should be an integral component in treatment programs targeted to either group, as well as prevention programs for women at risk for developing an eating disturbance.

Hypothesis 3 was only partially supported by the present data. Specifically, although significant differences in the expected direction were noted between the non-eating-disordered group and the subclinical bulimic group in terms of distraction, no significant differences were found between the subclinical bulimic group and the clinical bulimic group. Further, a post hoc comparison revealed no significant differences between the non-eating-disordered group and the clinical bulimic group. Distraction has
been described as an attempt to reduce stress by involving oneself in activities or tasks unrelated to the stressor, thereby avoiding the stressful situation (e.g., by watching television instead of studying for an exam) (Endler & Parker, 1990a).

The finding that the subclinical bulimic group utilize distraction as a coping strategy significantly more than the non-eating-disordered group but that the clinical bulimic group does not, suggests that this coping style is of particular import for subclinical bulimic women. It is possible that such individuals make use of a number of different avoidant, distracting behaviours when faced with stressful situations, including, but not limited to, bulimic behaviour. In other words, perhaps bulimic pathology is merely one of a number of types of avoidant behaviour that are implemented by subclinical bulimic women. For those women who go on to develop bulimia nervosa, alternate forms of distraction may be employed less frequently over time, as binge-eating and purging become the predominant modes for dealing with distress.

Hypothesis 4, which stated that clinical bulimic women would report using social diversion as a coping strategy more often than subclinical bulimic women, who in turn would report using social diversion more often than non-eating-disordered women, was not supported. Interestingly, a post hoc comparison revealed significant differences between the non-eating-disordered group and the clinical bulimic group, with the latter reporting less use of social diversion.

In the past, findings regarding social diversion have been mixed. Some researchers have found no relationship between level of eating disturbance and social diversion (e.g., Janzen et al., 1992; Koff & Sangani, 1997); whereas an inverse
relationship has been noted by others (e.g., Denisoff & Endler, 2000). The current finding that non-eating-disordered women report using social diversion as a coping strategy more often than clinical bulimic women was initially surprising. However, as was noted by Denisoff and Endler (2000), it is possible that social diversion, which necessitates seeking out other people, may lead to increased social support, and thereby serve a protective function. Keeping in mind that the subscale used to assess social diversion is based upon a participant’s responses to only five items, however, some caution should be taken when interpreting this finding.

When considering these results, it should be emphasized that no coping style per se is considered to be without value or function in certain situations, and that no specific strategy (e.g., problem-solving) is believed to be appropriate for dealing with all stressors (Troop et al., 1989). For example, it is conceivable that for some individuals, anorexic and bulimic behaviours represent extremely “problem-focused” strategies for dealing with a weight “problem”. Thus, it can be argued that it is not a particular coping strategy per se which may be maladaptive, but rather the incorrect use and/or overreliance on a coping style that may cause difficulty.

As indicated above, a distinct pattern of differences was noted between groups, depending on the coping style examined. Emotion-oriented coping was found to consistently discriminate each group from one another, while task-oriented coping distinguished the non-eating-disordered group from both bulimic groups. Distraction was found to differentiate the non-eating-disordered group from the subclinical bulimic group, whereas social diversion discriminated the non-eating-disordered group from the
clinical bulimic group. It is possible that the distinct pattern of differences noted for each variable may be due, in part, to differing rates of deterioration in functioning as eating pathology progresses. For example, perhaps one’s ability to use active, task-oriented coping strategies when faced with stress becomes compromised quite rapidly, as bulimia nervosa develops. In contrast, one’s ability to use emotion-oriented coping strategies adaptively may deteriorate at a somewhat slower rate. In the case of social diversion, perhaps one’s ability to seek out others when faced with stress does not become greatly compromised until severe eating pathology develops. It should be stressed, however, that because of the cross-sectional design of the current study, the extent to which coping skills deteriorate as eating pathology progresses is not known (i.e., one could argue that coping skills deficits predate the development of bulimia nervosa).

Perceived Support

Mixed support was noted for Hypothesis 5, which stated that non-eating-disordered women would report more perceived support from friends than subclinical bulimic women, who in turn would report more perceived support from friends than clinical bulimic women. Although subclinical bulimic women and clinical bulimic women were found to significantly differ in terms of perceived support, no such differences were noted between non-eating-disordered women and subclinical bulimic women. A post hoc comparison also revealed significant differences between the non-eating-disordered group and the clinical bulimic group, with the latter reporting less perceived support from friends.

The finding that women with a clinical diagnosis of bulimia nervosa differed
qualitatively from women without such a diagnosis in terms of perceived support from friends lends support to the discontinuity hypothesis. In other words, such a finding suggests that, in terms of perceived support from friends, the differences noted between women with bulimia nervosa and those with subclinical bulimia is a meaningful one, and not just a matter of degree (is qualitative).

The finding that non-eating-disordered women and subclinical bulimic women do not differ in terms of perceived support from friends, suggests that this may not be a variable of significant concern until eating pathology has become quite severe. Previous reports have also noted a distinction between those with a clinical eating disorder and those without in terms of other social variables. For example, in a study of actively bulimic women, recovered bulimic women, and non-eating-disordered women, the actively bulimic women reported having significantly fewer friends available to provide emotional support than either of the latter two groups. No such differences were noted between the recovered bulimic group and the non-eating-disordered group (Rorty et al., 1999).

Elsewhere, Garner et al. (1983) compared 49 female patients with anorexia nervosa, 38 weight-preoccupied women, and 137 non-weight-preoccupied women on a number of variables. They noted that no significant differences existed between the weight-preoccupied group and the non-weight-preoccupied group in terms of interpersonal distrust, while significant differences were noted between the anorexic group and the latter two groups. Although not identical to the present investigation, these studies suggest that interpersonal issues may be an area of particular import for women
suffering from bulimia nervosa, and should be a primary focus in any treatment program developed for them.

When interpreting the present findings, several explanations may be considered, as the direction of effects is not known. First, the results can be interpreted in terms of the “buffering hypothesis”, which conceptualizes social support as serving as a potential buffer which protects individuals from the effects of stress (e.g., Cohen & Wills, 1985; Grissett & Norvell, 1992; Wethington & Kessler, 1986). From this perspective, it can be argued that women who are already vulnerable to developing eating pathology may be more at risk for developing a full-blown eating disorder if they perceive their support from friends to be inadequate. Women who perceive higher levels of support from friends, however, may be able to maintain their disordered eating behaviour at a less severe, subclinical level (may increase resilience). The buffering hypothesis can also be used to explain why longitudinal studies that have examined the course of eating pathology over time have noted that some women seem to progress from subclinical eating disorders to clinical eating disorders, whereas others do not (e.g., Patton et al., 1990). That is, perhaps the women who did not develop a full-blown eating disorder were protected by higher levels of perceived support from friends.

An alternative explanation for the current findings is that it is the severity of disordered eating itself that results in the perception of less support. Bulimia nervosa, by its very nature, is considered to be an isolating, often secretive disorder. As symptom severity increases, social interactions with others may lessen, and the eating disorder may become the primary focus. With fewer social contacts, the size of the social network
may dwindle, resulting in the accurate appraisal that less satisfactory social support is available. Similarly, bulimic women may accurately perceive their support to be inadequate as a result of deficits in their own social skills (e.g., Herzog et al., 1987; Johnson & Berndt, 1983; Striegel-Moore et al., 1993). In the Grissett and Norvell (1992) study, for example, bulimic women were rated by independent observers as being less socially effective in their interactions with others. Finally, it is possible that bulimic women report less perceived support from friends than the other two groups not because they have less support available to them but because their needs for social dependency are greater (e.g., Jacobson & Robins, 1989).

Hypothesis 6, which stated that non-eating-disordered women would report more perceived support from family than subclinical bulimic women, who would in turn report more than clinical bulimic women, was not supported. A post hoc comparison revealed significant differences between the non-eating-disordered group and the clinical bulimic group, with the latter reporting less perceived support from family. These results are similar to those of Grissett and Norvell (1992), who found that clinical bulimic women reported significantly less perceived support from family members than did non-eating-disordered women. Increased dissatisfaction by bulimic women (both recovered and active) with regard to the quality of emotional support by family members has also been reported (Rorty et al., 1999). Researchers have noted that the families of bulimic women tend to have higher rates of hostile, conflictual interactions and less empathy (e.g., Humphrey, 1986). Recently, Tiller et al. (1997) found that a group of bulimic women (n=81) reported greater dissatisfaction with support from parents than either a group of
normal controls (n=86) or a group of anorexic women (n=44). However, whether problems within the familial environment are primary or secondary to the disorder is not known (Schmidt, Tiller, & Treasure, 1993).

Hypothesis 7 was supported. Specifically, clinical bulimic women reported higher levels of perceived stress than subclinical bulimic women, who reported higher levels of perceived stress than non-eating-disordered women. These findings are similar to those noted previously (e.g., Greenberg, 1986; Lacey et al., 1986; Troop et al., 1994), and lend support to the continuum hypothesis.

As already mentioned, there was an extremely high correlation between emotion-oriented coping and level of perceived stress. Such a high correlation suggests that these two measured variables may stem from similar underlying phenomena. Past researchers have noted that although bulimic women report higher levels of stress, the stressors they report experiencing are not unique to them (e.g., Cattanach & Rodin, 1988). It could be argued that individuals who tend to use emotion-oriented coping strategies when in stressful situations are not directly or purposefully dealing with the stressor, and therefore may be unsuccessful at effectively reducing their level of distress in the long-term. In other words, their perception of a high stress level may be due in part to the inability to manage stressful situations effectively, rather than to high levels of actual stressors. It is also possible, however, that the strong relationship noted between perceived stress level and emotion-oriented coping is actually the result of another variable’s influence, such as depressed mood (i.e., a depressed mood may lead to greater perceived stress, as well as to the increased use of emotion-oriented coping strategies).
The Continuum Hypothesis

A general goal of the present study was to determine whether or not certain variables varied incrementally between a group of non-eating-disordered women, a group of subclinical bulimic women, and a group of clinical bulimic women, thereby providing a test of the continuum hypothesis. In order to be supported, "the same variables that differentiate controls from subthreshold bulimic individuals should also differentiate subthreshold bulimic individuals from individuals with bulimia nervosa" (Stice et al., 1998, p.784).

Overall, the findings were mixed, with certain variables differentiating each group along a single dimension, and others not. The results involving emotion-oriented coping provide support for the continuum hypothesis, with usage of emotion-oriented coping strategies increasing as level of eating pathology increased. In addition, support was also found for perceived stress, with level of perceived stress increasing incrementally across groups. Support for the continuum hypothesis could also be found by examining the differences found between the subclinical bulimic group and the clinical bulimic group on two measures of disordered eating (i.e., the EAT-26 and the BULIT-R). Specifically, because assignment to the clinical bulimic group was based upon a clinical diagnosis, rather than upon meeting specific cut-offs on the EAT-26 or the BULIT-R, the finding that the clinical bulimic group nonetheless scored significantly higher than the subclinical bulimic group on both of these measures provides some support for the continuum hypothesis (the significant difference noted between the non-eating-disordered group and the subclinical group, however, is clearly a result of how
these groups were created).

On the other hand, the results regarding perceived support from friends lend support to the discontinuity perspective (i.e., the view that the distinction between subclinical bulimia and bulimia is a qualitative and meaningful one). Specifically, women with a diagnosis of bulimia nervosa were found to perceive significantly less support from friends than either subclinical bulimic women or non-eating-disordered women, with no significant differences discerned between the latter two groups.

The remaining results were somewhat more perplexing. The results noted for avoidance coping via distraction and perceived support from family were interesting, but did not provide evidence for either the continuum or discontinuity hypotheses. The finding that task-oriented coping distinguished those with eating pathology from those without provides some support for the continuum hypothesis. Specifically, although task-oriented coping did not vary incrementally between all groups, a trend existed in that direction. Further, the fact that subclinical bulimic women and clinical bulimic women differed from non-eating-disordered women but not from one another supports the view that the differences between these groups may be more based upon the frequency and duration of surface symptoms, rather than underlying phenomenology (e.g., Garfinkel et al., 1995).

What the current results do shed light on is the complex, potentially multidimensional nature of bulimic pathology. Disordered eating may be best conceptualized as both continuous and discontinuous, with certain variables lying upon a single dimension of severity, and others qualitatively distinguishing the groups. In the
past, it has been suggested that studies comparing groups on weight-concern-related variables have tended to provide support for the continuum hypothesis, while research examining more psychological symptoms have lent support to the discontinuity hypothesis (Stice et al., 1998). Thus, it is possible that subclinical bulimia and bulimia nervosa may in some ways remain unique entities, albeit with some overlap noted between them.

The current findings also lend support to the view that the EDNOS category within the DSM-IV (1994) is not a uniform grouping, but contains varying forms of eating pathology, each of which may have unique characteristics (e.g., Wilson et al., 1996). Thus, the present results underscore the importance of continuing to examine the EDNOS category.

**Treatment Suggestions**

In the current study, the treatment histories of the bulimic sample were quite extensive, with 38% of clinical bulimic women reporting prior psychiatric hospitalization, 52% reporting previous use of psychotropic medication, and 57% citing previous psychotherapy. These data highlight the chronic nature of bulimia nervosa, as well as the importance of continuing outcome research into the long-term efficacy of specific forms of treatment. It also points to the importance of intervening at a subclinical level whenever possible, before bulimic behaviours become more chronic, and possibly more resistant to treatment (e.g., APA, 2000).

The present findings can be used to make suggestions about “Track 2” treatment guidelines for both subclinical bulimic women and clinical bulimic women (Kalogdner &
Scarano, 1992). First, the finding that both of these groups differed from non-eating-disordered women in a number of their coping styles emphasizes the importance of including coping skills training as a component in general treatment programs geared toward both groups. Educating clinical bulimic women and subclinical bulimic women about adaptive methods for coping with stressful situations seems particularly warranted, given the finding that both groups reported higher levels of perceived stress than did non-eating-disordered women (with clinical bulimic women reporting the highest levels).

Previous research has noted the potential role that coping may play in recovery from bulimia nervosa (e.g., Yager et al., 1995), and past intervention programs for clinical bulimic individuals have included education regarding coping skills in their treatment protocols. For example, in Fairburn’s cognitive-behavioural therapy program for bulimia nervosa (1981), practitioners first attempt to establish some control over eating (through behavioural techniques, such as self-monitoring), and then focus upon teaching alternative coping strategies, through cognitive restructuring, appraisal of situations, and active problem-solving (task-oriented strategies). Based on the current results, it could be argued that implementing such a program with women suffering from bulimia nervosa at a subclinical level is also warranted. Further, including a coping skills training component in eating disorders prevention programs may also prove efficacious (e.g., Mayhew & Edelmann, 1989).

Second, the present findings concerning perceived support from friends underscore the importance of including interpersonal therapy techniques (IPT) in treatment programs for women suffering from bulimia nervosa. Recent research has
found interpersonal therapy to be as effective as cognitive-behavioural therapy in long-term follow-up with clinical bulimic women (Fairburn et al., 1995). According to Tiller et al. (1997), "Interventions designed to encourage patients to broaden their social network and to develop more effective methods for eliciting social support may be a useful addition to standard CBT" (p.37). Interpersonal therapy does not directly address eating disordered behaviours, and thus can be viewed as a Track 2 treatment approach. Techniques can include exploring interpersonal conflicts and role transitions (e.g., becoming a college student), as well as modifying maladaptive interpersonal patterns (e.g., Peterson & Mitchell, 1999). The focus is upon current experience (thoughts and emotions), with the relationship between the client and the therapist being the medium for instruction. It is believed that through an interpersonal focus (either in individual or group therapy), bulimic women can begin to proactively seek out available supports (Rorty et al., 1999).

The current results suggest that perceived support from friends is not an area of serious concern for subclinical bulimic women (i.e., they do not seem to perceive their support from friends to be inadequate). Nonetheless, it may still prove beneficial to include an interpersonal therapy component in treatment programs for these women, with social support used as a potential resource or protective factor to draw upon, to possibly enhance recovery and prevent relapse. It can be argued that by encouraging subclinical bulimic women to actively make use of their available supports in times of stress, the urge to binge-eat and/or purge may be reduced.

The finding that clinical bulimic women differed from non-eating-disordered
women in terms of perceived support from family indicates that treatment for clinical bulimics should include some form of family intervention (e.g., family therapy, marital therapy), whenever possible. Such intervention may be warranted in some situations more than others, such as when a client is living with parents or is married, and is experiencing ongoing conflict (e.g., APA, 2000). According to Vaz (1998), "...a functional family environment, appropriate social adjustment, and adequate social support seem to be predictors of a higher degree of remission in bulimic symptoms" (p. 397). Treatment programs geared toward providing support and education for the significant others of bulimics (both friends and family) have also been developed, with the ultimate goal of helping significant others to provide adequate emotional support for the bulimic women in their lives (Kapoor, 1989). Although no significant differences were noted between the subclinical bulimic group and the non-eating-disordered group in terms of perceived support from family, it could be argued that providing education and support to the significant others of subclinical bulimics may also enhance recovery from the disorder.

Taken together, the current findings indicate that comprehensive, multimodal treatment programs are necessary for both subclinical bulimic women and clinical bulimic women. Further, the results suggest that although similar, the treatment needs of these two groups do differ, and treatment programs should ideally reflect such differences.

**Predictors of Disordered Eating in a Student Sample**

A secondary purpose of the current study was to determine whether or not level of
disordered eating among female undergraduates was related to perceived support from friends and from family, perceived stress, emotion-oriented coping, task-oriented coping, and two forms of avoidance-oriented coping (via distraction and via social diversion). Analysis of the current data indicated that perceived stress, emotion-oriented coping, distraction, and social diversion were significant in predicting disordered eating.

The finding that emotion-oriented coping was positively related to bulimic symptomatology has been noted consistently in past research (e.g., Denisoff & Endler, 2000; Janzen et al., 1992; Shatford & Evans, 1986). Emotion-oriented coping has been considered a risk factor for eating disorders (Koff & Sangani, 1997), as well as for health concerns and psychiatric symptomatology in general (Endler & Parker, 1990a).

In the current study, both forms of avoidance-oriented coping were found to be related to eating disturbance, results that support previous research (e.g., Denisoff & Endler, 2000; Mayhew & Edelmann, 1989; Troop et al., 1994; Troop et al., 1998). As predicted, distraction was found to be a positive predictor of disordered eating. As was noted for emotion-oriented coping, distraction as a coping strategy involves indirect attempts at coping with a stressful situation, rather than directly focusing on a specific problem. Given that binge eating and purging have also been conceptualized as indirect attempts at coping with stress (e.g., Yager et al., 1995), it is not surprising that bulimic symptomatology is significantly related to both of these coping styles.

Social diversion was also found to predict disordered eating, but not in the expected direction. Specifically, increased use of social diversion was associated with reduced levels of eating disturbance. Although initially surprising, Denisoff and Endler
(2000) have observed that distraction often involves solitary, potentially isolating activities, whereas social diversion involves seeking out and interacting with other people, a strategy that may result in increased social support. As well, in the current study, distraction and social diversion were only moderately correlated. Thus, future researchers should consider measuring these two forms of avoidance-oriented coping separately, as they seem to measure somewhat different phenomena. Perceived stress was also found to be positively related to level of disordered eating, a finding which provides additional support to the research literature concerning the relationship between perceived stress level and bulimia (e.g., Cattanach & Rodin, 1988).

Contrary to expectation, neither task-oriented coping nor either form of perceived support was found to predict level of eating disturbance. Past findings regarding task-oriented coping and eating pathology have been conflicting. Some researchers have noted an inverse relationship between bulimic symptomatology and task-oriented coping (e.g., Janzen et al., 1992), whereas others have found no relationship (e.g., Denisoff & Endler, 2000; Koff & Sangani, 1997; Tobin & Griffing, 1995). In their study involving 128 college women, Koff and Sangani (1997) explained the lack of a significant relationship noted between task-oriented coping and eating pathology as follows: “The current data indicate that task-oriented coping is in fact already in the coping repertoire, but may need to be redirected toward dealing with the stress associated with disordered eating” (p.56). In other words, women who engage in bulimic behaviours may possess active, problem-focused coping strategies, but may benefit from being educated about how to effectively make use of such skills at times when the urge to binge or purge is the
greatest.

The lack of any relationship between level of eating disturbance and perceived support from friends or from family was surprising given the findings from past studies regarding bulimia and social impairment (e.g., Herzog et al., 1987; Johnson & Berdt, 1983; Striegel-Moore et al., 1993). For example, in the Grissett and Norvell (1992) study which examined eating pathology and perceived support, 21 women with a diagnosis of bulimia nervosa were compared to 21 non-eating-disordered women, and were found to significantly differ in perceived support. In the current study, none of the student participants met the frequency and/or duration criteria for a diagnosis of bulimia nervosa (based on self-report, questionnaire data). It is possible that perceived support qualitatively differentiates individuals with severe eating pathology (i.e., clinical bulimia nervosa) from those without, rather than increasing incrementally along a single dimension (a finding that was noted for the grouped data). Consequently, it could be argued that the present nonsignificant relationship may be due in part to the fact that none of the participants in the student sample were reporting severe enough eating pathology for a significant relationship to be revealed.

**Limitations of the Study**

A number of limitations can be noted with the present study. One limitation relates to the way in which the sample of clinical bulimic women was selected. The clinical bulimic participants were patients who had voluntarily been admitted into a residential treatment facility for eating disorders. It is possible that these women differ in significant ways from clinical bulimic women who do not seek treatment for their
disordered eating, or who seek treatment on an outpatient basis. In particular, it is likely that women who are referred to an inpatient eating disorders program suffer from bulimic symptoms that have become quite chronic in nature, and fairly resistant to change. Keeping in mind the lengthy treatment histories of the clinical bulimic women in the current sample, it is possible that chronicity of symptoms may have played a role in the present findings. Consequently, caution should be exercised when trying to generalize the current findings to the overall population of bulimic women.

Similarly, because the clinical bulimic group was composed of women who were hospitalized at the time of the study, whereas the other two groups were not, it is possible that hospitalization itself may have been a confounding variable. However, the variables examined are likely to be fairly enduring in nature (e.g., coping styles) and the clinical bulimic women participated in the study within two weeks of admission into treatment. Thus, it is unlikely that hospitalization per se would have significantly altered the results (Soukup et al., 1990).

A related concern with the current study is the way in which subclinical bulimic women were identified. The classification of subclinical bulimia was based solely upon self-report, questionnaire data, rather than on clinical interview data. This might have resulted in the over-reporting of symptomatology, and may have resulted in false positives (thus affecting the study’s validity). However, by requiring participants to reach cut-offs on two previously used measures of established reliability and validity, and by examining responses to individual items in order to check for frequency and duration of symptoms, the problems associated with using questionnaires were lessened somewhat.
Further, because the criteria used to identify subclinical bulimics was quite strict, the percentage of women who were classified with subclinical bulimia in the current sample was fairly conservative (7%) in comparison to other studies, thus reducing the possibility of false positives. For example, Stice et al. (1998) identified 15% of their sample as being subthreshold bulimic.

Another limitation of the current study was the size of the samples used. Because the sample size of each group was small, statistical power was relatively low. Thus, it is possible that only large effects were found to be significant, with more subtle differences showing nonsignificance. It should be noted, however, that for the most part, no strong trends appeared in the nonsignificant results, with only one of the nonsignificant group differences even approaching significance (i.e., the difference between subclinical bulimia and clinical bulimia in terms of task-oriented coping). Thus, as has been mentioned elsewhere (Jacobson & Robins, 1989), it is unlikely that larger sample sizes would have resulted in different findings (with the possible exception already noted). Further, the fact that significant results were noted despite small sample sizes suggests that such differences were true, meaningful differences, rather than an artifact of large samples. Finally, the sample sizes for groups are similar to those used by Grissett and Norvell (1992), who included 21 bulimic women and 21 non-eating-disordered women as participants, and whose research the current study is partially based upon.

Another limitation has to do with the way in which coping styles were measured. In the current study, coping style was based upon self-report data. However, as stated by Troop et al. (1998), such measurement may not be completely accurate, as individuals
may not always be consciously aware of the coping strategies that they implement in times of stress (perhaps need a different method of measuring this variable).

An additional limitation is the fact that comorbid diagnoses were not thoroughly assessed. Comorbidity of disorders is common among bulimic individuals, with comorbid major depression or dysthymia reported in 50-75% of patients with bulimia nervosa, and personality disorders in 42-75% of patients (APA, 2000). Hence, it is possible that other disorders led to the observed group differences, rather than the severity of bulimic symptomatology per se. In future research, it would be useful to include comorbid diagnoses as a potential covariate or dependent variable, in order to determine to what extent they may be related to coping styles, perceived support, and perceived stress.

A final limitation of the study is its design. Because the investigation was cross-sectional in nature, and because participants were not randomly assigned to groups, no statements can be made about the direction of effects or about causality. It should be noted, however, that random assignment to groups is not feasible when studying eating pathology.

**Future Research Directions**

As is true with most studies, the findings of the current investigation lead to more research questions, than to answers. Other comparison groups should probably be included in future investigations. For example, recovered bulimic women could be used as a comparison group in any studies involving subclinical bulimic women and bulimic women. In addition, other groups of women along the hypothesized eating continuum
could participate in research, including chronic dieters, those who only binge-eat, and those who only purge (e.g., Mintz & Betz, 1988). Such research could also provide useful information about the various groups that are currently relegated to the EDNOS category within the DSM-IV (1994).

In addition, women with other forms of psychopathology (e.g., depression, substance abuse) could be compared to subclinical and bulimic women, to determine to what extent certain variables are specific to eating pathology, as well as what variables characterize individuals with psychological concerns in general. In the present study, the majority of participants were women in their 20s. Given that eating disorders are of particular concern for adolescent women (DSM-IV, 1994), it would be interesting to examine the present variables in a younger sample, to determine whether a different patterns of results might emerge. It is possible, for example, that perceived support from family might be of particular import for younger women with eating pathology whom are still living with parents.

The current study was cross-sectional in nature, resulting in a single "snapshot" of participants at one point in time. In the future, it would be useful to conduct longitudinal, prospective studies to determine whether or not movement exists between the groups over time. It is possible that the current subclinical bulimic group was a heterogeneous one, with certain individuals in the beginning stages of bulimia nervosa, and others "true" subclinical bulimics who would be able to maintain their disordered eating behaviours at a subclinical level. Future research could help to clarify whether or not subclinical bulimic women who go on to develop bulimia nervosa differ significantly
from subclinical bulimic women who do not. It is believed that such research could have important implications for treatment strategies aimed at prevention and early intervention. According to APA (2000), future research should include “further delineation and definition of eating disorder not otherwise specified… with clarification of risk factors, morbidity, treatments, and prognosis” (p.30).

Both the present investigation and previous studies in the area of the eating disorders continuum have focused solely upon women. Keeping in mind that eating pathology does occur among men (APA, 1994), it would be interesting if future research examined similar variables with male participants. Does a continuum of eating disturbance and/or distorted body image exist for men, and if so, what form does it take?

The current study was loosely conceptualized around the view that mediating factors exist between stress and eating pathology (e.g., Cattanach & Rodin, 1988; Troop et al., 1994), with coping styles and perceived support as the variables examined. In future research, it would be useful to investigate other potential mediating variables, including personality characteristics, cognitive appraisal of one’s environment (Grissett & Norvell, 1992), and perceived control (Cattanach & Rodin, 1988).

Finally, although a number of treatment suggestions have been generated by the present research, the actual efficacy of such interventions for women suffering from subclinical bulimia is not known. As stated previously, a high percentage of the women who seek treatment for an eating disturbance suffer from a subclinical eating disorder. Thus, outcome studies that directly examine the effectiveness of treatment programs for women suffering from bulimia at a subclinical level are definitely warranted.
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APPENDIX A

Demographic Questionnaire

1) Age: ______

2) Height (in feet): ______  3) Weight (in pounds): ______

4) Ethnic Background:
   a) Caucasian __
   b) Afro-Caribbean __
   c) Asian __
   d) First Nations __
   e) Other (please specify) ______

5) Are you currently in University? Yes _  No _
   If Yes, what year are you in? __
   If No, have you ever attended University and/or College?  Yes _  No _
   If Yes, for how long? ______

6) Please indicate if you are currently receiving any of the following types of psychiatric/psychological treatment (check all that apply):
   a) Psychotherapy __  For how long? (in months) __
   b) Psychiatric Medication __  For how long? (in months) __
   c) Inpatient Hospital Stay __  For how long? (in months) __
   d) Self-Help/Support Group __  For how long? (in months) __
   e) Other (please specify) ____________  For how long? ___
7) Please indicate if you have **previously** received any of the following types of psychiatric/psychological treatment (check all that apply):

a) Psychotherapy ______ For how long? (in months) ___

b) Psychiatric Medication ___ For how long? (in months) ___

c) Inpatient Hospital Stay ___ For how long? (in months) ___

d) Self-Help/Support Group ___ For how long? (in months) ___

e) Other (please specify) _____________ For how long? ___

8) If you responded to either 6 or 7, please indicate what your main reason was for seeking treatment at that time. Please include in your response any diagnosis that you were given (e.g., Depression, Anorexia Nervosa, Bulimia Nervosa):

________________________________________________________________________

________________________________________________________________________
APPENDIX B

Bulimia Test-Revised

**INSTRUCTIONS:** Answer each question by circling the appropriate number. Please respond to each item as honestly as possible; remember, all the information you provide will be kept strictly confidential.

1. I am satisfied with my eating patterns.
   1. Agree
   2. Neutral
   3. Disagree a little
   4. Disagree
   5. Disagree strongly

2. Would you presently call yourself a "binge eater"?
   1. Yes, absolutely
   2. Yes
   3. Yes, probably
   4. Yes, possibly
   5. No, probably not

3. Do you feel you have control over the amount of food you consume?
   1. Most or all of the time
   2. A lot of the time
   3. Occasionally
   4. Rarely
   5. Never

4. I am satisfied with the shape and size of my body.
   1. Frequently or always
   2. Sometimes
   3. Occasionally
   4. Rarely
   5. Seldom or never
5. When I feel that my eating behaviour is out of control, I try to take rather extreme measures to get back on course (strict dieting, fasting, laxatives, diuretics, self-induced vomiting, or rigorous exercise).
   1. Always
   2. Almost always
   3. Frequently
   4. Sometimes
   5. Never or my eating behaviour is never out of control

6. I use laxatives or suppositories to help control my weight. **
   1. Once a day or more
   2. 3-6 times a week
   3. Once or twice a week
   4. 2-3 times a month
   5. Once a month or less (or never)

7. I am obsessed about the size and shape of my body.
   1. Always
   2. Almost always
   3. Frequently
   4. Sometimes
   5. Seldom or never

8. There are times when I rapidly eat a very large amount of food. ##
   1. More than twice a week
   2. Twice a week
   3. Once a week
   4. 2-3 times a month
   5. Once a month or less (or never)

9. How long have you been binge eating (eating uncontrollably to the point of stuffing yourself)? ##
   1. Not applicable; I don't binge eat
   2. Less than 3 months
   3. 3 months to 1 year
   4. 1-3 years
   5. 3 or more years

10. Most people I know would be amazed if they knew how much food I can eat at one sitting.
    1. Without a doubt
    2. Very probably
    3. Probably
    4. Possibly
    5. No
11. I exercise in order to burn calories.**
   1. More than 2 hours per day
   2. About 2 hours per day
   3. More than 1 but less than 2 hours per day
   4. One hour or less per day
   5. I exercise but not to burn calories or I don't exercise

12. Compared with women your age, how preoccupied are you about your weight and body shape?
   1. A great deal more than average
   2. Much more than average
   3. More than average
   4. A little more than average
   5. Average or less than average

13. I am afraid to eat anything for fear that I won't be able to stop.
   1. Always
   2. Almost always
   3. Frequently
   4. Sometimes
   5. Seldom or never

14. I feel tormented by the idea that I am fat or might gain weight.
   1. Always
   2. Almost always
   3. Frequently
   4. Sometimes
   5. Seldom or never

15. How often do you intentionally vomit after eating? ##
   1. 2 or more times a week
   2. Once a week
   3. 2-3 times a month
   4. Once a month
   5. Less than once a month or never

16. I eat a lot of food when I'm not even hungry.
   1. Very frequently
   2. Frequently
   3. Occasionally
   4. Sometimes
   5. Seldom or never
17. My eating patterns are different from the eating patterns of most people.
   1. Always
   2. Almost always
   3. Frequently
   4. Sometimes
   5. Seldom or never

18. After I binge eat I turn to one of several strict methods to try to keep from gaining weight (vigorous exercise, strict dieting, fasting, self-induced vomiting, laxatives, or diuretics). ##
   1. Never or I don't binge eat
   2. Rarely
   3. Occasionally
   4. A lot of the time
   5. Most or all of the time

19. I have tried to lose weight by fasting or going on strict diets.**
   1. Not in the past year
   2. Once in the past year
   3. 2-3 times in the past year
   4. 4-5 times in the past year
   5. More than 5 times in the past year

20. I exercise vigorously and for long periods of time in order to burn calories.**
   1. Average or less than average
   2. A little more than average
   3. More than average
   4. Much more than average
   5. A great deal more than average

21. When engaged in an eating binge, I tend to eat foods that are high in carbohydrates (sweets and starches).
   1. Always
   2. Almost always
   3. Frequently
   4. Sometimes
   5. Seldom or I don't binge
22. Compared to most people, my ability to control my eating behaviour seems to be:
   1. Greater than others' ability
   2. About the same
   3. Less
   4. Much less
   5. I have absolutely no control

23. I would presently label myself a "compulsive eater" (one who engages in episodes of uncontrolled eating).
   1. Absolutely
   2. Yes
   3. Yes, probably
   4. Yes, possibly
   5. No, probably not

24. I hate the way my body looks after I eat too much.
   1. Seldom or never
   2. Sometimes
   3. Frequently
   4. Almost always
   5. Always

25. When I am trying to keep from gaining weight, I feel that I have to resort to vigorous exercise, strict dieting, fasting, self-induced vomiting, or diuretics.
   1. Never
   2. Rarely
   3. Occasionally
   4. A lot of the time
   5. Most or all of the time

26. Do you believe that it is easier to vomit than it is for most people?
   1. Yes, it's no problem at all for me
   2. Yes, it's easier
   3. Yes, it's a little easier
   4. About the same
   5. No, it's less easy

27. I use diuretics (water pills) to help control my weight.**
   1. Never
   2. Seldom
   3. Sometimes
   4. Frequently
   5. Very frequently
28. I feel that food controls my life.
   1. Always
   2. Almost always
   3. Frequently
   4. Sometimes
   5. Seldom or never

29. I try to control my weight by eating a little or no food for a day or longer.**
   1. Never
   2. Seldom
   3. Sometimes
   4. Frequently
   5. Very frequently

30. When consuming a large quantity of food, at what rate of speed do you usually eat?
   1. More rapidly than most people have ever eaten in their lives.
   2. A lot more rapidly than most people
   3. A little more rapidly than most people
   4. About the same rate as most people
   5. More slowly than most people (or not applicable)

31. I use laxatives or suppositories to help control my weight.**
   1. Never
   2. Seldom
   3. Sometimes
   4. Frequently
   5. Very frequently

32. Right after I binge eat I feel:
   1. So fat and bloated I can't stand it
   2. Extremely fat
   3. Fat
   4. A little fat
   5. OK about how my body looks or I never binge eat

33. Compared to other people of my sex, my ability to always feel in control of how much I eat is:
   1. About the same or greater
   2. A little less
   3. Less
   4. Much less
   5. A great deal less
34. In the last 3 months, on the average how often did you binge eat (eat uncontrollably to the point of stuffing yourself)? ##
   1. Once a month or less (or never)
   2. 2-3 times a month
   3. Once a week
   4. Twice a week
   5. More than twice a week

35. Most people I know would be surprised how fat I look after I eat a lot of food.
   1. Yes, definitely
   2. Yes
   3. Yes, probably
   4. Yes, possibly
   5. No, probably not or I never eat a lot of food

36. I use diuretics (or water pills) to help control my weight.**
   1. 3 times a week or more
   2. Once or twice a week
   3. 2-3 times a month
   4. Once a month
   5. Never

37. In the last 3 months, on the average how often did you use laxatives or diuretics (water pills) to prevent weight gain? ## +
   1. Once a month or less (or never)
   2. 2-3 times a month
   3. Once a week
   4. Twice a week
   5. More than twice a week

38. In the last 3 months, on the average how often did you fast, use enemas, or exercise excessively in order to prevent gaining weight? ## +
   1. Once a month or less (or never)
   2. 2-3 times a month
   3. Once a week
   4. Twice a week
   5. More than twice a week

Note. Underlined items should be reverse scored (i.e., 1=5, 5=1, 2=4, 4=2, 3=3). Items with an asterisk should be left unscored. ## = items that were used to evaluate frequency and duration of binge-eating and the use of compensatory behaviours. ++ = items developed by A. Hendley for additional information.

APPENDIX C

The Eating Attitudes Test-26

Please indicate on the line at the left the answer which applies best to each of the numbered statements. All of the results will be strictly confidential. Most questions directly relate to food or eating, although other types of questions have been included. Please answer each question carefully.

1=Always  2=Very Often  3=Often  4=Sometimes  5=Rarely  6=Never

__ 1. Am terrified about being overweight.

__ 2. Avoid eating when I am hungry.

__ 3. Find myself preoccupied with food.

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

__ 5. Cut my food into small pieces.

__ 6. Aware of the caloric content of the foods that I eat.

__ 7. Particularly avoid foods with a high carbohydrate content (e.g., bread, potatoes, rice, etc.).

__ 8. Feel that others would prefer if I ate more.

__ 9. Vomit after I have eaten.

__ 10. Feel extremely guilty after having eaten.

__ 11. Am preoccupied with a desire to be thinner.

__ 12. Think about burning calories when I exercise.

__ 13. Other people think that I am too thin.


__ 15. Take longer than others to eat my meals.

__ 16. Avoid eating food with sugar in them.

__ 17. Eat diet foods.
18. Feel that food controls my life.

19. Display self control around food.

20. Feel that others pressure me to eat.

21. Give too much thought and time to food.

22. Feel uncomfortable after eating sweets.

23. Engage in dieting behaviour.

24. Like my stomach to be empty.

25. Enjoy trying rich new foods.

26. Have the impulse to vomit after meals.

APPENDIX D

Perceived Support Scale

1) Perceived Social Support-Friends

Directions: The statements which follow refer to feelings and experiences which occur to most people at one time or another in their relationships with friends. For each statement there are three possible answers: Yes, No, Don't know. Please circle the answer you choose for each item.

Yes  No  Don't Know 1. My friends give me the moral support I need.

Yes  No  Don't Know 2. Most other people are closer to their friends than I am.

Yes  No  Don't Know 3. My friends enjoy hearing about what I think.

Yes  No  Don't Know 4. Certain friends come to me when they have problems or need advice.

Yes  No  Don't Know 5. I rely on my friends for emotional support.

Yes  No  Don't Know 6. If I felt that one or more of my friends were upset with me, I'd just keep it to myself.

Yes  No  Don't Know 7. I feel that I'm on the fringe in my circle of friends.

Yes  No  Don't Know 8. There is a friend I could go to if I were just feeling down, without feeling funny about it later.

Yes  No  Don't Know 9. My friends and I are very open about what we think about things.

Yes  No  Don't Know 10. My friends are sensitive to my personal needs.

Yes  No  Don't Know 11. My friends come to me for emotional support.

Yes  No  Don't Know 12. My friends are good at helping me solve problems.

Yes  No  Don't Know 13. I have a deep sharing relationship with a number of friends.

Yes  No  Don't Know 14. My friends get good ideas about how to do things or make things from me.

Yes  No  Don't Know 15. When I confide in friends, it makes me feel uncomfortable.
Yes  No  Don't Know  16. My friends seek me out for companionship.

Yes  No  Don't Know  17. I think that my friends feel that I'm good at helping them solve problems.

Yes  No  Don't Know  18. I don't have a relationship with a friend that is as intimate as other people's relationships with friends.

Yes  No  Don't Know  19. I've recently gotten a good idea about how to do something from a friend.

Yes  No  Don't Know  20. I wish my friends were much different.

Directions: The statements which follow refer to feelings and experiences which occur to most people at one time or another in their relationships with their families. For each statement there are three possible answers: Yes, No, Don't know. Please circle the answer you choose for each item.

Yes  No  Don't Know  1. My family gives me the moral support I need.

Yes  No  Don't Know  2. I get good ideas about how to do things or make things from my family.

Yes  No  Don't Know  3. Most other people are closer to their family than I am.

Yes  No  Don't Know  4. When I confide in the members of my family who are closest to me, I get the idea that it makes them uncomfortable.

Yes  No  Don't Know  5. My family enjoys hearing about what I think.

Yes  No  Don't Know  6. Members of my family share many of my interests.

Yes  No  Don't Know  7. Certain members of my family come to me when they have problems or need advice.

Yes  No  Don't Know  8. I rely on my family for emotional support.

Yes  No  Don't Know  9. There is a member of my family I could go to if I were just feeling down, without feeling funny about it later.

Yes  No  Don't Know  10. My family and I are very open about what we think about things.

Yes  No  Don't Know  11. My family is sensitive to my personal needs.
12. Members of my family come to me for emotional support.

13. Members of my family are good at helping me solve problems.

14. I have a deep sharing relationship with a number of members of my family.

15. Members of my family get good ideas about how to do things or make things from me.

16. When I confide in members of my family, it makes me uncomfortable.

17. Members of my family seek me out for companionship.

18. I think that my family feels that I'm good at helping them solve problems.

19. I don't have a relationship with a member of my family that is as close as other people's relationships with family members.

20. I wish my family were much different.

APPENDIX E

Coping Inventory for Stressful Situations

(Endler & Parker, 1990)

Available from:

Multi-Health Systems, Inc.
(1-800-268-6011)
Toronto, ON
APPENDIX F
Perceived Stress Scale

INSTRUCTIONS: The questions in this scale ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate how often you felt or thought a certain way. Although some of the questions are similar, there are differences between them and you should treat each one as a separate question. The best approach is to answer each question fairly quickly. That is, don't try to count up the number of times you felt a particular way, but rather indicate the alternative that seems like a reasonable estimate.

0 = Never
1 = Almost never
2 = Sometimes
3 = Fairly Often
4 = Very Often

__ 1. In the last month, how often have you been upset because of something that happened unexpectedly?

__ 2. In the last month, how often have you felt that you were unable to control the important things in your life?

__ 3. In the last month, how often have you felt nervous and "stressed"?

__ 4. In the last month, how often have you dealt successfully with irritating life hassles?

__ 5. In the last month, how often have you felt that you were effectively coping with important changes that were occurring in your life?

__ 6. In the last month, how often have you felt confident about your ability to handle your personal problems?

__ 7. In the last month, how often have you felt that things were going your way?

__ 8. In the last month, how often have you found that you could not cope with all the things that you had to do?

__ 9. In the last month, how often have you been able to control irritations in your life?

__ 10. In the last month, how often have you felt that you were on top of things?

__ 11. In the last month, how often have you been angered because of things that happened that were outside of your control?
12. In the last month, how often have you found yourself thinking about things that you have to accomplish?

13. In the last month, how often have you been able to control the way you spend your time?

14. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?

Note. Items which are underlined should be reverse scored (i.e., 0=4, 1=3, 2=2).

APPENDIX G

Consent Form for Participants from the University of Windsor

Researcher: Alicia Hendley, M.A., University of Windsor
Supervisor: Dr. Cheryl Thomas, C.Psych., University of Windsor

I am a student in Clinical Psychology, and am presently conducting a study for my doctoral dissertation. The purpose of the study is to examine the possible relationships between eating behaviours (including bulimic behaviours), social support, and ways of coping. If you choose to participate, you will be asked to complete a questionnaire which includes items related to your eating habits, your social support system, current stressors in your life, and the ways in which you cope. The questionnaire will take approximately one hour to complete. For your participation in the study, you will receive one bonus credit, which will count toward your course grade in Psychology 115/116.

It should be emphasized that participation in this study is completely voluntary. If you choose to participate, you will not be asked to identify yourself in any manner upon the questionnaire, and will thus remain anonymous. Your confidentiality will also be ensured by having the consent forms and the completed questionnaires stored separately from one another. If at any point during the study you do not wish to complete the questionnaire, you may withdraw your participation, without explanation or penalty.

If you have any questions about the study, I will answer them at any point throughout the study, as well as after the questionnaires have been completed. In addition, if you wish to obtain more information about the study, you may contact me (by leaving a note in my mailbox in the Psychology Department), and I will send you a summary of the study once it has been completed. This study has been reviewed by the Department of Psychology Ethics Committee. If you have any concerns regarding the ethics of the study, they may be addressed to the Chairperson of the Ethics Committee, Dr. Douglas Shore, Department of Psychology (phone 253-4232, extension 2253). Other concerns or comments may be made to my thesis supervisor, Dr. Cheryl Thomas, Department of Psychology (phone 253-4232, extension 2252).

I understand the above information, and give my willing and voluntary consent to take part in the present study:

a) Printed name: __________________

b) Signature: ____________________

c) Date: ________________________
APPENDIX H

List of Possible Referrals

Sometimes people find that in the course of participating in research they have some concerns about themselves or others (e.g., friends, family members) that they may wish to address. If you have any concerns or questions you may contact any of the following organizations:

1) Psychological Services Centre (University of Windsor)
   326 Sunset Avenue, Windsor
   Direct Line: (519) 973-7012
   On Campus: Ext. 7012

2) BANA (Bulimia Anorexia Nervosa Association)
   (519) 253-7421 (information)
   (519) 253-7575 (office)

3) Distress Centre Windsor Essex County Inc.
   (519) 256-5000

4) Medical and Health Services (University of Windsor)
   (519) 253-4232, Ext. 7002
APPENDIX I

Letter of Introduction to Homewood Health Centre

Dear Ms. Gates, as I mentioned earlier during our telephone conversation, I am a Ph.D. student in Clinical Psychology at the University of Windsor, and am currently preparing to propose my dissertation during the month of September or early October (Dr. Cheryl Thomas is the head of my dissertation committee). For my dissertation, I hope to examine whether or not three different groups along a continuum of eating disturbance differ in their levels of perceived support from friends and family and in the coping strategies that they implement. The groups of women that I hope to include in my study will be: 1) non-eating-disordered women; 2) women suffering from bulimia at a subclinical level; and 3) women diagnosed with bulimia nervosa. Based upon my results, I hope to develop treatment guidelines for an intervention program that will be tailored to the needs of young women suffering from bulimia at a subclinical level.

I hope to recruit participants for the subclinical bulimic group and the bulimic group from an eating disorder treatment facility, such as Homewood Health Centre (participants for the non-eating-disordered group will likely be recruited from the University of Windsor). For my research, the bulimic group will be composed of young women (over 17 years of age) who meet the DSM-IV criteria for bulimia nervosa, but who do not meet diagnostic criteria for anorexia nervosa. The subclinical bulimic group will be composed of young women who meet all of the DSM-IV criteria for a diagnosis of bulimia nervosa except for the frequency and/or duration criteria (e.g., a young woman who binge-eats and then purges approximately once a month). Once again, these participants must not meet diagnostic criteria for anorexia nervosa.

Women who agree to participate in the study will be asked to complete a package of questionnaires. The questionnaires which I plan to include are the following: 1) The Bulimia Test-Revised (BULIT-R; Thelen et al., 1991), which assesses bulimic symptomatology; 2) the Eating Attitudes Test-26 (EAT-26; Garner & Garfinkel, 1982), which measures eating disordered attitudes and behaviours; 3) the Perceived Support Scale (PSS; Procidano & Heller, 1983), which measures the extent to which an individual perceives that she is receiving adequate social support from friends and family members; and 4) the Coping Inventory for Stressful Situations (CISS; Endler & Parker, 1990), which assesses the extent to which an individual uses different coping strategies when facing stressful situations. The questionnaire package should take approximately one hour to complete.

If you are interested in the study, I will likely recruit participants from Homewood Health Centre by sending you several questionnaire packages, which then could be distributed to young women who are interested in participating. To be included in the study, participants will have to have received a clinical diagnosis of bulimia nervosa, or have
meet all of the criteria for bulimia nervosa, except for the frequency and/or duration criteria. Included in the questionnaire package will be a cover letter for each participant, as well as two copies of a consent form (one copy will be for them to keep). I will also enclose self-addressed, stamped envelopes so that you can send the questionnaire packages back to me. Participants will not be asked to place their names anywhere on the questionnaires, and will therefore remain anonymous. I plan to further ensure confidentiality by storing the signed consent forms and the completed questionnaires separately from one another.

In order to determine which group a participant’s data should be designated to, I will need to have the group identity of each participant (i.e., bulimic or subclinical bulimic) be indicated on the first page of her questionnaire, possible by using a code number (e.g., 1 = bulimia nervosa, 2 = subclinical bulimia). Other than that code number, no identifying information will be asked for. Once the study has been completed, I will then send you a summary of the research, and can also send this information to any participant who is interested.

Once I have formally proposed my dissertation and received ethical approval from the Department of Psychology Ethics Committee (University of Windsor), I can send you a copy of my questionnaire package for you to consider, if you are interested in the study. At any time I will be glad to answer any questions or concerns which you might have about my research, and to provide you with whatever additional information you might need. Any feedback would be greatly appreciated.

Sincerely,

Alicia Hendley, M.A.

Note. As mentioned above, it was initially hoped that participants for the subclinical bulimic group would also be recruited from Homewood Health Centre. After meeting with Homewood staff, however, it was brought to the present researcher’s attention that all of the individuals admitted into the eating disorders program have received a diagnosis of Anorexia Nervosa or Bulimia Nervosa.
APPENDIX J

Cover Letter for Participants from
Homewood Health Centre

Dear Research Participant:

I am a Ph.D. student in Clinical Psychology at the University of Windsor. I am conducting a study for my doctoral dissertation to examine the possible relationships between eating behaviours (including bulimic behaviour), social support, and the ways that people cope. Women who choose to participate will be asked to complete a questionnaire. It is my hope that the information I obtain from my study will be used to aid in the treatment of women with eating difficulties.

Enclosed are two copies of a consent form, a questionnaire, and an envelope. If, after reading through the consent form you wish to participate in the study, please sign both copies of the consent form, and keep one copy for yourself. The other copy is to be returned to either Dr. Stuart Ross or Ms. April Gates.

As stated in the consent form, participation in the study is completely voluntary. The questionnaire takes approximately one hour to finish. Once you have completed the questionnaire, please place it and one of the consent forms in the envelope provided, and seal the envelope. Please then return the questionnaire to Dr. Stuart Ross or Ms. April Gates.

Thank you for your time and effort. It is very much appreciated!

Sincerely,

Alicia Hendley
Department of Psychology
University of Windsor
APPENDIX K

Consent Form for Participants from Homewood Health Centre

Researcher: Alicia Hendley, M.A.
Department of Psychology, University of Windsor
Supervisor: Dr. Cheryl Thomas, C.Psych., University of Windsor

I am a Ph.D. student in Clinical Psychology, and am presently conducting a study for my doctoral dissertation. The purpose of my study is to examine the possible relationships between eating behaviours (including bulimic behaviours), social support, and ways of coping. If you choose to participate, you will be asked to complete a questionnaire which includes items related to your eating habits, your social support system, current stressors in your life, and the ways in which you cope.

The questionnaire will take approximately one hour to complete. It should be emphasized that participation in this study is completely voluntary. If you choose to participate, you will not be asked to identify yourself in any manner upon the questionnaire, and will thus remain anonymous. Your confidentiality will also be ensured by having the consent forms and the completed questionnaires stored separately from one another. Any items that you do not wish to answer on the questionnaire may be skipped. Finally, if at any point during the study you do not wish to complete the questionnaire, you may withdraw your participation, without explanation or penalty.

This study has been reviewed by the Department of Psychology Ethics Committee. If you have any concerns regarding the ethics of the study, they may be addressed to the Chairperson of the Ethics Committee, Dr. Douglas Shore, Department of Psychology: (519) 253-4232, extension 2253. Other concerns or comments may be made to my thesis supervisor, Dr. Cheryl Thomas, Department of Psychology: (519) 253-4232, extension 2252.

Any questions or concerns about the study may also be made to either Dr. Stuart Ross (519) 824-1010, extension 253 or Ms. April Gates (519) 824-1010, extension 292 (both at Homewood Health Centre). If you wish to obtain more information about the study, you may contact me by writing me at the address below, and I will send you a summary of the study once it has been completed:

Alicia Hendley, Graduate Student
Department of Psychology
University of Windsor, Windsor, ON

I understand the above information, and give my willing and voluntary consent to take part in the present study:

Printed name: ___________________ Signature: ___________________

Date: ___________________
APPENDIX L
Internal Consistency Reliability Coefficients for each
Dependent Variable, According to Group

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<thead>
<tr>
<th>Measure</th>
<th>Group</th>
<th>Alpha Coefficient</th>
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<tbody>
<tr>
<td>1) Task-oriented coping scale (CISS)</td>
<td>Clinical Bulimic Women</td>
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</tr>
<tr>
<td></td>
<td>Subclinical Bulimic Women</td>
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<td>2) Emotion-oriented coping scale (CISS)</td>
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<td>3) Distraction subscale (CISS)</td>
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<td>5) Perceived Support Scale (Friends)</td>
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<td></td>
<td>Non-Eating-Disordered Women</td>
<td>.92</td>
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## APPENDIX M

**Internal Consistency Reliability Coefficients for each Dependent Variable for the Entire Student Sample**

<table>
<thead>
<tr>
<th>Measure</th>
<th>Alpha Coefficient</th>
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<tbody>
<tr>
<td>1) Task-oriented coping scale (CISS)</td>
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</tr>
<tr>
<td>2) Emotion-oriented coping scale (CISS)</td>
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<tr>
<td>3) Distraction subscale (CISS)</td>
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<td>4) Social Diversion subscale (CISS)</td>
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<td>6) Perceived Support Scale (Family)</td>
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</tr>
<tr>
<td>7) Perceived Stress Scale</td>
<td>.87</td>
</tr>
</tbody>
</table>
VITA AUCTORIS

Alicia Hendley was born on December 19, 1970 in Kitchener, Ontario. In 1991, she enrolled at Wilfrid Laurier University, and graduated in May, 1994 with a Bachelor of Arts degree (Honours) in Psychology. In September, 1994 she enrolled in the Ph.D. program in Clinical Psychology (Adult stream) at the University of Windsor, where she received her Master of Arts degree in 1996. She is currently a candidate for her Ph.D. degree in Clinical Psychology, and hopes to graduate in the spring of 2001.