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THE EFFECT OF ALTERNATIVE STRESS RESPONSE  
TRAINING ON BULIMIC BEHAVIORS

DISSERTATION

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The incidence of bulimia has been increasingly documented in recent years. Treatments have focused on one behavior in the Binge-Purge chain or have combined several treatment components. This study was designed to assess the effect of teaching bulimics alternative responses for dealing with stressful events.

Subjects were 26 females, ages 18 to 35, who met the DSM-III criteria for bulimia. Thirteen subjects were randomly assigned to each of two groups. The groups met for 1½ hours weekly for 6 weeks.

All subjects completed the Binge-Eating Questionnaire, the Life Events Questionnaire, the Treatment Survey Form, and an Informed Consent Form prior to treatment. Subjects in both groups collected daily binge-eating data. All subjects completed pre- and post-tests on the Self-Evaluation Questionnaire (SEQ), an anxiety inventory, and the Coping Skills Test (CST), an audiotaped assessment in which subjects described their probable reactions to stressful situations.

In the alternative stress response group, subjects discussed adaptive behaviors for dealing with events typically preceding binge episodes. Subjects responded to imaginal scenes and then generated possible alternative behaviors. Subjects in the experiential group engaged in personal self-exploration.

It was hypothesized that the experimental group would show significantly greater decreases in binge-eating episodes, significantly greater positive changes on the CST, and significantly greater reductions in scores on the state-anxiety scale of the SEQ when compared to the control group. It was also hypothesized that neither group would significantly change scores on the trait-anxiety scale of the SEQ.

The first hypothesis concerning decreases in binge-eating data was tested with an analysis of variance and was not supported. The second and third hypotheses regarding changes in ratings on the CST and reductions in scores on the state-anxiety scale, respectively, were tested with analyses of covariance. Neither hypothesis was supported. The last hypothesis regarding possible changes on the trait-anxiety scale was tested with an analysis of covariance and was supported.

Overall, findings from this study do not support the research hypotheses. Other potentially relevant variables, however, have become more apparent and suggest changes for future research.

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THE EFFECT OF ALTERNATIVE STRESS RESPONSE  
TRAINING ON BULIMIC BEHAVIORS

Different writers in the field of eating disorders (Boskind-Lodahl & White, 1978; Guiora, 1967; Linden, 1980; Palmer, 1979; Russell, 1979; Wardle & Beinart, 1981) have used the following terms to label individuals who eat large quantities of food in a short period of time: bulimia, bulimia nervosa, bulimarexia, dietary chaos syndrome, binge-purge syndrome, dysorexia. Bulimic individuals then try to escape the effects of their excessive eating behaviors through self-induced vomiting, laxative abuse, restrictive dieting, or excessive exercise. The confusing number of terms used to describe these highly similar behaviors may be a function of the relatively short time the syndrome has been evident to researchers and clinicians. As this area of research continues to develop, greater consistency of terminology may ensue.

For consistency within the framework of this paper, the terms "bulimia" and "bulimic" shall be used exclusively to describe the behaviors of those individuals who meet the criteria enumerated in the Diagnostic and Statistical Manual of Mental Disorders (DSM-III):

- (1) recurrent episodes of binge eating (rapid consumption of a large amount of food in a discrete period of time, usually less than two hours).

- (2) at least three of the following:
  - (a) consumption of high-caloric, easily ingested food during a binge
  - (b) inconspicuous eating during a binge
  - (c) termination of such eating episodes by abdominal pain, sleep, social interruption, or self-induced vomiting
  - (d) repeated attempts to lose weight by severely restrictive diets, self-induced vomiting, or use of cathartics or diuretics
  - (e) frequent weight fluctuations greater than ten pounds due to alternating binges and fasts.
- (3) awareness that the eating pattern is abnormal and fear of not being able to stop eating voluntarily.
- (4) depressed mood and self-deprecating thoughts following eating binges.
- (5) the bulimic episodes are not due to Anorexia Nervosa or any known physical disorder (American Psychiatric Association, 1980, pp. 70-71).

Within the literature on eating disorders, an overlap currently exists between bulimia as a separate syndrome and bulimic phases in anorexia nervosa. Recent research has indicated that bulimia has been occurring at a more rapid rate among individuals who have not shown previous symptoms of anorexia nervosa or obesity (Halmi, Falk, & Schwartz, 1981;

Johnson & Larson, 1982; Stangler & Printz, 1980). Those articles on anorexia nervosa that included bulimic behaviors will be discussed in this paper; however, anorexia nervosa, per se, will not be reviewed.

Bulimic behaviors, by definition, have entailed a high degree of secrecy (APA, 1980). The general lack of knowledge about the syndrome may have been due to two factors: the relatively small percentage of bulimics in the general population as well as the fact that bulimics tend not to talk about their binge-purge behaviors (Cauwel, 1983). Recent surveys of college populations, however, have indicated that the prevalence of bulimia is increasing. A study by Stangler and Printz (1980) showed 3.8% of the total patient sample at a university psychiatric clinic were bulimic, with 89.5% of these female. These authors believed the 3.8% to be a conservative estimate of the syndrome, because other cases involving bulimia were revealed during therapy. A sample of a normal college population by Halmi et al. (1981) indicated that 13% of the students experienced the major symptoms of bulimia; within this bulimic population, 87% were females.

As with any recently recognized disorder (Halmi et al., 1981), much research has focused on descriptive studies to ascertain which historical variables may have been relevant to the development of bulimia (Johnson & Stucky, 1982). Areas covered have included gender, weight history, family history,

behavioral descriptors, medical complications, and psychological adjustment.

Data on the variable of gender have revealed an overwhelming consensus among the various researchers that the typical bulimic patient was female (Boskind-Lodahl, 1976; Casper, Eckert, Halmi, Goldberg, & Davis, 1980; Garfinkel, 1981; Garfinkel, Moldofsky, & Garner, 1981; Halmi et al., 1981; Herzog, 1982; Johnson & Larson, 1982; Loro & Orleans, 1981; Pyle, Mitchell, & Eckert, 1981; Russell, 1979; Stangler & Printz, 1980). Several studies mentioned the exceptionally low numbers of male subjects represented in the current literature (Casper et al., 1980; Garfinkel et al., 1980; Halmi et al., 1981), while Loro and Orleans (1981) stated that no studies of sex distribution of this behavior pattern had been reported.

The research on weight history has shown that the majority of bulimics reported histories of average weight or slight overweight and attempts at various diets without much success (Casper et al., 1980; Garfinkel et al., 1980; Herzog, 1982; Johnson & Larson, 1982; Mitchell, Pyle, & Eckert, 1981; Pyle et al., 1981; Russell, 1979). Most patients expressed fears of becoming obese and seemed to see themselves as overweight. At the onset of bulimia, few of the individuals were markedly overweight, and most indicated a desired weight as less than the minimum for their height (Pyle et al., 1981; Russell, 1979). Loro and Orleans (1981), however, did find binge eaters among



obese and chronically overweight patients. No data were presented on purge behaviors for these individuals; a lack of purging may have been a factor in their being overweight.

Family history data noted in several studies have documented the relatively high frequency of obesity in family members (Garfinkel, 1981; Garfinkel et al., 1980; Herzog, 1982; Pyle et al., 1981). Garfinkel et al. (1980) mentioned the presence of anorectic siblings in 6.5% of the patient sample. In addition to familial eating disorders, Herzog (1982), Hudson, Laffer, & Pope (1981), and Pyle et al. (1981) reported family histories of depression and alcoholism.

Boskind-Lodahl (1976) described the family dynamics from self-reports of 138 bulimic patients. Mothers were considered weak and unhappy, having abandoned careers to raise children. With their children, the mothers were said to be suffocating, dominating, and manipulative. Bruch (1981) hypothesized that the mothers imposed their conceptions of the children's needs onto the children rather than allowing the children to learn to recognize their own bodily sensations. Fathers were described as powerful but distant figures (Boskind-Lodahl & Sirlin, 1977), objects of hero worship, and emotionally rejecting. The bulimic patients reported striving frantically for academic or social achievement to meet the goal of pleasing their parents (Boskind-Lodahl, 1976). These aspects of family history might be viewed as comprising an environment conducive to producing stress reactions.

Several researchers collected data on the specific behaviors involved in binge-purge episodes. In a study of 40 bulimic patients, Mitchell et al. (1981) evaluated daily self-report records of duration and frequency of binge eating and vomiting episodes for one week. The mean duration of binge episodes was 1.18 hours, ranging from 15 minutes to 8 hours. The most common pattern involved patients binge eating at least once each day, spending an average of 13.7 hours each week in binge eating. The mean number of calories consumed during an average binge-eating episode was 3415 with a range of 1200 to 11,500 calories. Thirty-seven of the 40 patients terminated binge-eating episodes by vomiting. Commonly consumed foods included ice cream, bread or toast, candy, doughnuts, soft drinks, salads or sandwiches, cookies, popcorn, milk, cheese, and cereal. An excessive intake of primarily carbohydrates was also described in a study by Crisp (1967).

In gathering their data on bulimic behaviors, Johnson and Larson (1982) used a highly systematic approach. They furnished electronic pagers, enabling their subjects to self-monitor their eating behaviors. Bulimic women exceeded the normals in percent of waking hours they were involved with food, 38% versus 14%, respectively. Almost all cases of an ongoing binge-purge episode took place at home while the subject was alone. This data confirmed the defining characteristic of secrecy for binge eaters and established that much of the bulimic's day

was spent in isolation. The bulimic's tendency toward isolation might also have been seen as a somewhat ineffective coping strategy--an attempt to avoid some of the antecedent events for binge eating (i.e., stressful stimulation in the form of the sight or odor of favorite binge foods or from interpersonal difficulties).

Binge episodes appeared to occur after the noon and evening meals (Johnson & Larson, 1982). There were higher rates of both binges and purges in the mid-afternoon (2-4 p.m.) and evening (6-8 p.m.). An increased rate of purging was recorded between 8 and 10 p.m. Binge behaviors were associated with the complex emotional behaviors labelled guilt, shame, and anger. Each of these labels for emotional behaviors might readily be conceptualized as being correlated with aversive events, i.e., stressful stimulation. Purge behaviors were correlated with guilt, shame, and alertness--anger was noticeably absent. Feelings of control and personal adequacy were reported to have increased following a purge. This resurgence of feelings of control and adequacy was not surprising, given that the bulimic typically became very accomplished in their purge behaviors (Russell, 1979). With few other alternative responses, these patients seemed to have dealt with the world through their maladaptive behaviors.

As a matter of record, bulimic patients described themselves as feeling less in control and less adequate

preceding a binge or purge (Johnson & Larson, 1982). These authors viewed the more positive feelings of control and adequacy as results of successful interactions with the environment. An absence of effective alternative behaviors for dealing with stressful events could be a factor in the bulimics' feelings of a lack of control over their highly probable responses of binge eating. Further, having gradually restricted their environment through isolative behaviors, the bulimic patients have less opportunity for experiencing or labeling success in the world at large. In addition, the bulimic patients' tendencies to look to others for validation of their self-worth might have interfered with their ability to label successful interactions with their environment.

One of the long-term effects of the bulimic's binge-purge behaviors was medical complications. Bhanji and Mattingly (1981) described problems requiring medical attention for those bulimic patients who engaged in purge behaviors. These researchers found that the mean carotene concentration was lower in those patients who reduced weight by self-induced vomiting in contrast to those who lost weight by dieting; they stated, however, that the finding was inconsistent and could possibly be due to the patients' diets. Fairburn (1980) and Dawson and Jones (1977) also noted several features apparently due to self-induced vomiting, including progressive anergia and lassitude, peripheral paraesthesiae in the absence of objective neurological signs, palpitations, symptoms of

dehydration (e.g., low urinary output, dry mouth, and constipation), and physiological complications due to vomiting (e.g., lower respiratory tract infections, numerous throat infections, and chronic hoarse voice). Russell (1979) found one instance of renal failure and numerous reports of potassium depletion in a sample of 30 bulimic patients. In contrast, Pyle et al. (1981) reported no abnormal serum potassium levels but did find menstrual difficulties. Herzog (1982), Pyle et al. (1981), and Russell (1979) noted patients' having a painless swelling of salivary glands due to excessive vomiting. Herzog (1982) also described rectal bleeding, alopecia, and dental enamel loss. As can be seen from these reports, vomiting as a dual mechanism for relief from abdominal pressure and weight control had numerous harmful byproducts. Dooley (1982b) has documented that an awareness of these medical complications--potential or actual--did not reduce the frequency of purge behaviors.

Casper et al. (1980), Fairburn (1980), Garfinkel et al. (1980), Guiora (1967), Hsu and Crisp (1980), Johnson and Larson (1982), Kornhaber (1970) Mitchell and Pyle (1982), Palmer (1979), Pyle et al. (1981), and Russell (1979) reported depression and marked emotional lability as prevalent among bulimic patients. Beumont, George, and Smart (1976), Hsu and Crisp (1980), and Russell (1979) also described bulimics as hysterical, fearful of men (Boskind-Lodahl & Sirlin, 1977), low in self-esteem (Boskind-Lodahl, 1976), passive-dependent (Kornhaber, 1970), and orally fixated with a sadomasochistic orientation (Guiora,

1967). Several studies labelled bulimic patients as impulsive, in reference to reports of stealing, chemical dependency, and self-mutilation with or without suicidal intent (Garfinkel, 1981; Garfinkel et al., 1980; Johnson & Larson, 1981; Pyle et al., 1981; Russell, 1979; Dooley, 1982a). According to Fairburn (1980), Garfinkel (1981), Johnson and Larson (1982), and Russell (1979), the bulimic behaviors resembled those of anorectics in their excessive preoccupations with food and weight, distorted body images, overcompliance, and social isolation.

In addition to the historical variables reported by bulimics, researchers in the field of eating disorders indicated interest in the possible causal variables in the development and maintenance of bulimia. Why did bulimic patients begin acting self-destructively, and why did these maladaptive behaviors continue? In the area of binge-eating behaviors, psychologists and psychiatrists began to examine possible antecedent and consequent variables. Researchers studied the following antecedent conditions: physiological, cognitive, arousal level, and social variables, separately or in combination.

As causal agents, physiological variables thus far have received little support. Green and Rau (1974) and Moore and Rakes (1982) looked at the possibility of a neurological dysregulation in bulimic patients. Electroencephalograms administered to the patients showed 14- and 6-per-second

positive spikes in right temporal and occipital areas; results of treatment with anticonvulsants were mixed. Crisp (1967) suggested that severely restricted carbohydrate intake could instigate eating binges, but he presented only anecdotal data to support his theory.

In dealing with cognitive variables as antecedents, several studies involved a mixture of cognitive and biological variables for bulimic patients who dieted strictly prior to binge eating. The cognitive variable was the decision to diet; the presumed biological variable was the actual reduction in intake. Much of this research had as a basis Nisbett's (1972) hypothesis that each person had a biological set-point for weight which, for some people, may be well above their ideal weight. Thus, dieting individuals were assumed to be always physiologically deprived.

Polivy (1976) studied restrained subjects (i.e., individuals who dieted strictly before bingeing). After being told they were eating a high-calorie substance for a pre-load condition, restrained subjects subsequently ate more in the test condition than did restrained subjects who thought the pre-load substance was low-calorie. Unrestrained (nondietering) subjects did the reverse. Polivy concluded that the condition of restraint rather than obesity was the relevant dimension in the ability to regulate intake. In similar studies, Herman and Mack (1975) and Spencer and Fremouw (1979) support Polivy's findings. Wardle and Beinart (1981) generalized from these

restraint studies to suggest that a binge episode be conceptualized as the bulimic's capitulating to the belief that the rules (restraints) had already been broken. Another formulation might be that the bulimic's breaking the rule of eating only low-calorie foods created a stressful situation for which the most probable response was a binge episode.

Wardle and Beinart's (1981) conceptualization of binge eating as capitulation was supported by Russell's (1979) clinical observations that bulimics responded to events in the world in an all-or-none, black-or-white concrete fashion. Concomitantly, Boskind-Lodahl and Sirlin (1977) and Dooley (1982a) noted that bulimics used sets of black or white rules to protect themselves from dealing with a world they saw as frightening. These black or white rules initially might have functioned to reduce the conflict that accompanied decision-making, thereby reducing the bulimics' levels of stress. Ultimately, however, the rules might have compounded stress reactions because of the changing nature of the world for which no rule could always be appropriate. Indeed Boskind-Lodahl and Sirlin (1977) and Dooley (1982a) believed that such rules kept bulimics from developing more malleable, adaptive alternative responses for handling distressing situations.

Gormally, Black, Daston, and Rardin (1982) presented another cognitive model, stating that high dieting standards in conjunction with low personal efficacy tended to increase



the probability of a lapse of self-control, or binge behaviors, when a person met a stressful, high-risk situation. They concluded that high standards were self-defeating when a person felt incapable of following them. Dooley (1982a) concluded that these high standards might have represented another area of black or white thinking, with a lessening of personal efficacy resulting from inaccurate evaluations of successful interactions with the environment.

Another group of researchers conceptualized the occurrence of binge behaviors as a function of the bulimic patient's emotional behavior generated in response to stress--variously labelled anxiety, mood, emotions, or distress. Herman and Polivy (1975) added anxiety as a component of their restraint research and found that restrained eaters binged when anxious, while unrestrained normals ate considerably less. Johnson and Larson (1982) suggested the possibility that binge episodes were the bulimic's attempt to modulate dysphoric and fluctuating mood states. They further hypothesized that food was selected for tension regulation--rather than alcohol, drugs, or promiscuity--because of a combination of predisposing biochemical, familial, and cultural factors. Rost, Neuhaus, and Florin (1982) also referred to the role of emotional distress in binge behaviors, but they suggested a somewhat narrowly-defined hypothesis: the conflicts and discrepancies between sex role attitude and sex role behaviors created the bulimic women's

distress. The discrepancies between the reported positive sex role attitudes and the contrary isolative sex role behaviors may very well have been a result of the bulimics' propensity to reduce stress by avoiding interactions with others, thus keeping themselves protected from their own feelings of low self-worth (Boskind-Lodahl & Sirlin, 1977).

Support for Johnson and Larson (1982) came from Casper et al. (1980) who reported that patients related they do not overeat just to ease hunger feelings, but also to relieve distressing emotions (e.g., anxiety, depression, and guilt). The bulimics' deficiencies in appropriate alternative behaviors for decreasing the emotional responses resulting from some stressful event may have been critical in their turning to food for relief. The authors suggested the behaviors comprising the eating process (biting, chewing, and swallowing) developed into a relief mechanism from distressing thoughts and emotions. The patient's emotional behaviors may, therefore, have come to function partly as discriminative stimuli for approach responses toward food.

Social variables also have been regarded as possible causal factors in binge behaviors. Boskind-Lodahl (1976) and Boskind-Lodahl and Sirlin (1977) presented a complex feminist position regarding social interactions, beginning with family members and extending to current sex roles in American culture. These researchers described the bulimic patients as having been overly compliant children, afraid of parental disapproval. These

girls grew up with a generalized fear of rejection, particularly in sexual relationships. Their attempts to be perfect for others (especially men) led them to regulate their lives very strictly; the stress resulting from any perceived or actual rejections became an excuse for binge episodes. Their lack of alternative responses apparently kept them locked into the binge-purge cycle which served only to further isolate them in its accompanying secrecy. Patients appeared to be responding to opposing tensions--the desire for self-validation from men versus a fear of men with their power to reject. Dooley (1982a) has suggested that this approach-avoidance conflict generalized to almost anyone regarded as being in an authoritative role--therapists, doctors, employers, or admired peers.

Stunkard (1959) and Wilson (1976) also offered clinical observations regarding bulimics and social situations, conceptualizing interpersonal conflicts or stressors as a class of antecedent stimuli for binge behaviors. Bulimics were described as showing "an inability to cope effectively with stressful events as a result of unassertive behaviors" (Wilson, 1976; p. 700); bulimics seemed to lack self-acceptance and effective coping skills. Loro and Orleans (1982) supported this view, stating that problems in personal relationships often precipitated binges. They further stated that these stressful external events generated the emotional behaviors

termed anxiety, depression, or frustration and called for clarification of the role of recurrent interpersonal problems and underassertiveness in bulimic behaviors.

Slade (1982) proposed the following combination of events were involved in the development of both anorexia nervosa and bulimia: dependence/independence issues, interpersonal problems, social introversion and anxiety, stress and failure experiences combined with pressure to achieve, and perfectionistic tendencies. Slade hypothesized that these conditions established an extremely restricted environment, leaving the patient able only to control her bodily functions. With a limited number of responses to cope with the various stressors she faced, the bulimic, as Slade suggested, typically turned to food. According to Slade, a binge was seen as a temporary loss of control, with the bulimic supposedly re-establishing control through purge behaviors such as vomiting or laxative abuse.

The previously mentioned variables or combinations thereof were hypothesized to have comprised the antecedent or setting events for binge behaviors, with little or no mention of what functioned as the consequent events for maintaining binge eating. The implications were that repeated binge episodes were simply a function of cyclical processes. All the various hypotheses--neurological dysregulation, carbohydrate deficiency, reaction to prolonged dieting (restraint), low personal efficacy, stressful stimulation and the resulting emotional behaviors--implied that the

setting events would eventually re-occur, and that when they did, a binge episode would follow. Casper et al. (1981) briefly mentioned a more specific process to account for binge eating, namely, the bulimics' reports of overeating to gain relief from distressing emotions. Their binge eating apparently resulted in escape from the emotional response created by some stressful event; the subsequent reduction in arousal functioned as a negative reinforcer for the binge episode. With secrecy and isolation as components of binge behaviors, movements toward a binge also necessitated a withdrawal from other potentially stressful stimuli--another possible negative reinforcer for overeating. Concomitantly, contact with food would have functioned as a positive reinforcer for binge eating.

In contrast to the large number of studies concerned with antecedent and consequent events for binge behaviors, few researchers speculated on the controlling variables for the purge behaviors that typically followed binge eating. The majority of bulimic patients vomited as their purging mechanism, although Pyle et al. (1981) and Russell (1979) documented laxative or diuretic abuse.

Most research implied that the likely antecedent variable for vomiting was the binge episode: a more parsimonious explanation would have been the stimulation from abdominal pressure which resulted from the binge eating. Russell (1979) and Beumont et al. (1976) proposed that bulimic patients used vomiting as a mechanism for weight control, an event too far

removed to be a causal factor, but, nevertheless, an extremely probable long-term effect of the vomiting.

Patients in the Johnson and Larson (1982) study reported renewed feelings of alertness and control and a discharge of anger following a purge. The researchers speculated that, over time, bulimics eventually felt emotional relief from vomiting rather than from the binge behaviors and wondered if binge eating, therefore, was controlled more by the opportunity to purge than by the afore-mentioned antecedent events.

The review of the literature thus far has presented the historical variables reported by bulimic patients and has included various hypotheses for antecedent and consequent events involved in binge-purge episodes. The afore-mentioned research has shown the increasing clinical interest in this patient population. Still other researchers in the field of eating disorders have worked to establish effective treatment paradigms for bulimic patients.

The majority of studies reporting treatment of bulimic patients have been individual case reports (Fairburn, 1981; Grinc, 1982; Kenny & Solyom, 1971; Linden, 1980; Long & Cordle, 1982; Meyer, 1972; Mizes & Lohr, 1983; Monti, McCrady & Barlow, 1977; Moore & Rakes, 1982; Morganstern, 1974; Rosen & Leitenberg, 1982; Wijesinghe, 1973). Boskind-Lodahl, however, in conjunction with her associates, conducted group treatment for bulimics (Boskind-Lodahl, 1976; Boskind-Lodahl & Sirlin,

1977; Boskind-Lodahl & White, 1978; Boskind-White & White, 1983; White & Boskind-White, 1982). The types of treatment reported in the literature included pharmacological intervention, individual therapy manipulating one variable, individual therapy with several elements, and group therapy with a combination of components. Length of treatment has ranged from 7 weeks to 1 year.

Medical treatment of bulimia was based on the possibility of a neurological dysregulation. Green and Rau (1974), Moore and Rakes (1982), and Wermuth, Davis, Hollister, and Stunkard (1977) used anticonvulsant medications to reduce the frequency of binge episodes in bulimic subjects. Moore and Rakes' only patient responded well to the medication; Green and Rau found that nine out of their ten patients reduced their binge-eating behaviors as a result of treatment. In a double-blind crossover study, Wermuth et al. (1977), however, reported the medication was useful in the treatment of only a few binge eaters. The researchers questioned whether or not psychological changes in the subjects' lives were important in controlling their binge eating. These authors concluded further research was needed to determine the usefulness of anticonvulsant medication as a major treatment for bulimia.

Several of the individual treatment studies reported the use of an aversive stimulus to punish a response in the binge-purge chain. Morganstern (1974) paired the inhalation of cigarette smoke with the ingestion of problem foods. The

client reported a generalized self-regulatory optimism and initiated substantial changes in her overall diet. Wijesinghe (1973) treated two outpatients with electric shock, randomly administered when the patient was touching or eating favorite binge foods. There was a complete cessation of binge eating reported for both subjects after the aversive treatment, but follow-up data were confounded by subsequent supportive therapy sessions. In another study, also using faradic disruption, Kenny and Solyom (1971) administered shock during an imaginal sequence of the patient's vomiting behavior. The patient reported a gradual reduction in vomiting frequency, with no resumption of the behavior reported at a 3-month follow-up. The follow-up data apparently were anecdotal, as no systematic data collection was reported.

In a multiple baseline study conducted by Monte et al. (1977), the effects of positive reinforcement, informational feedback, and contingency contracting were assessed for a bulimic inpatient who vomited and abused laxatives and diuretics. The most powerful effect on caloric intake occurred when reinforcement was contingent on both weight increase and caloric intake. Follow-up treatment consisted of outpatient contingency contracting for consumption of 1800 to 2300 calories per day, no vomiting, and no ingestion of unprescribed medication. The patient reported breaking the contract six times during outpatient treatment. Her



intermittent resumption of bulimic behaviors may have been a function of a lack of alternative responses for dealing with stressful environmental events.

In another multiple baseline study, Rosen and Leitenberg (1982) hypothesized vomiting as an escape-avoidance behavior for anxiety brought on by the stressful events of excessive thoughts of food or distressing social interactions. The effects of exposure to food stimuli plus vomiting response prevention were assessed. Their results suggested that binge eating was more a consequence of vomiting than vomiting was a function of binge eating. This finding supported a similar contention presented by Johnson and Larson (1982).

Four studies using a combination of behavior therapy techniques presented data from individual outpatient cases (Fairburn, 1981; Linden, 1980; Long & Cordle, 1982; Meyer, 1973). Techniques included self-control procedures for eating behaviors, dietary education, cognitive change methods, problem-solving, and assertiveness training. All patients showed decreases in their maladaptive behaviors across treatment. Follow-up data showed the majority of the patients engaged in bulimic behaviors only every two to three months; patients reported these binges always occurred at times of stress. Their continued maladaptive responses to stress may have been due to a deficit in alternative, adaptive behaviors. The fact that a combination of interventions was used in these cases prevented an analysis of

which components might have been relevant. In addition, no systematic data for bulimic behaviors were included in the report, leaving only anecdotal data available for analysis.

The only researchers who reported group treatment of outpatient bulimics were Boskind-Lodahl and Sirlin (1977), Boskind-Lodahl and White (1978), Boskind-White and White (1983), and White and Boskind-White (1981). Group treatment was considered particularly helpful in facilitating a reduction in the patients' isolative tendencies as well as desensitizing the women to potentially stressful social interactions (White & Boskind-White, 1981). The therapeutic guidelines for these studies consistently included the following elements: focus on present situations, exploration and development of patients' personal strengths, assertiveness training, group interactions to overcome isolative tendencies, and behavioral contracting techniques.

Boskind-Lodahl and White (1978) reported an improvement in subjects' binge-purge behaviors. By the end of 12 weeks of treatment, four patients had stopped their bulimic behaviors completely, and six stated their binges were less frequent and of shorter duration as they were able to stop the cycle once it had started. Two women experienced no change.

Similar results were reported by White and Boskind-White (1981): three patients had stopped completely, seven binged intermittently when under stress, and four experienced little change in their bulimic behaviors. Those subjects in both

Boskind-Lodahl and White's (1978) and White and Boskind-White's (1981) studies who continued to binge may not have developed a sufficient repertoire of alternative responses for dealing with stressful antecedent events. Those who ceased to binge may have had a more extensive behavioral repertoire at the onset of treatment and thus more readily generalized the treatment elements. The patients' binge-purge data appeared to be anecdotal rather than systematically recorded; therefore, the frequencies may not have been accurately reported. In addition, a combination of therapy strategies did not allow for an analysis of which treatment component might have been the most critical for the progress that was shown.

A significant number of the patients and clinician/researchers involved in the above-mentioned treatment studies reported stressful environmental events as a likely variable in bulimic behaviors. A brief review of a few of the theories on stress could clarify the underlying assumption of stress as a factor in the manifestation of bulimic behaviors. The general concept of stress has been defined as "the state manifested by a specific syndrome which consists of all the nonspecifically induced changes within a biologic system" (Selye, 1956a, p. 54). Selye's work laid the foundation for an understanding of the physiological processes associated with stress. The syndrome was considered a specific configuration of physiological processes occurring in response to stress and was called the General Adaptation Syndrome (G.A.S.).

The G.A.S. was a characteristic three-phase response the body made to the presence of stress: 1) the alarm stage, defined as the mobilization of physiological resources, 2) the resistance stage, defined as the physiological changes that acted to lessen the primary effects of stress (i.e., asthma, ulcers, migraine), and 3) the exhaustion stage, defined as the point when all resistance has collapsed, and the organism dies.

The adaptation process, as it occurred, was thought to contribute to the development of various physiological problems classified as diseases of adaptation. Among the disorders of adaptation Selye discussed were high blood pressure, kidney and cardiovascular diseases, rheumatic and rheumatoid arthritis, digestive and metabolic diseases, cancer, and nervous and mental diseases. Within the context of this paper, bulimia might be included as a member of the class of nervous and mental diseases which Selye formulated.

Selye (1956a) speculated that the above-mentioned problems arose as by-products of the body's response to the presence of stressors, those stimuli that occur in sufficient amount to cause stress. Stressors have been categorized as unlearned and learned (Malott & Whaley, 1976). Unlearned stressors were defined as stimuli "which by their very nature destroy tissue (i.e., knocks, cuts, friction, poisons, radiation, lack of air or nutrients)" while learned stressors were defined as "initially neutral stimuli that the body comes to respond to

as though they are harmful" (Malott & Whaley, 1976, p. 480). As described here, stressors would be classified as aversive events--stimuli to which the organism reacts with an escape or avoidance response. Based on these definitions, the previously-mentioned antecedent stimuli for binge-eating episodes would, in all likelihood, be classified as generalized learned stressors.

In addition to Selye's theory on the physiological processes associated with stress, other models conceptualized stress as responses to social-psychological stimuli. Wolff (1953) considered stress to be the interaction between the external environment and the organism, with the past experience of the organism viewed as a major factor. An individual's interactions with the environment were seen as not always being effective in maintaining homeostasis; Wolff suggested that particular organ systems were directly influenced by social stressors to the point of irreversible damage. This somewhat narrow theoretical stance was based on Wolff's hypothesis that specific organ systems were affected by stress through symbolic representation of underlying psychodynamic processes (e.g., large bowel constipation was correlated with feelings of holding back and involved "sadness, dejection, or cheerless striving") (Wolff, 1953, p. 88).

While Wolff's theory focused on specific bodily reactions, Lazarus (1966) developed a model of stress primarily based on cognitive processes, with threat and appraisal forming the two

central processes. He defined threat as a state in which the individual anticipated a confrontation with a harmful condition. While this aspect of his model seemed similar to the environmental-interactive one presented by Wolff (1953), Lazarus's theory relied heavily on the cognitive process of appraisal to determine whether or not a threat existed. Once a threat was delineated, the individual then engaged in coping processes to "reduce or eliminate the anticipated harm" (Lazarus, 1966, p. 25). Lazarus emphasized that the coping process also relied on cognitive appraisal.

Mechanic (1968) presented another model of stress, defined as "a discrepancy between the demands impinging on a person and the individual's potential responses to these demands" (p. 301). Anxiety, fear, and depression were viewed as probable by-products of stress responses. Mechanic developed his model as one of adaptation or "the way in which a person deals with his situation and his feelings aroused by the situation" (Mechanic, 1968, p. 210). He stated that the most important process in adapting to stress involved practice, experience, and familiarity with modes of dealing with a situation. This theoretical position clearly supported the notion of the feasibility of an individual's learning adaptive alternative coping responses to stressful stimuli in the environment.

Selye's (1956a) somewhat abbreviated view of psychological stressors involved the concept of deviation as a means of "combating purely mental stress" (p. 268). In his opinion,

tensions, frustrations, a sense of insecurity, and aimlessness were among the most important stressors. He suggested that the best remedy for psychological stress was to diffuse the activation response by focusing on another problem or by activating the whole body, thereby proportionally reducing the impact of the initial stress response. A natural extension of this line of thought might be that a bulimic's attempts to reduce levels of activation might take the form of the avoidance and escape responses of binge-eating. As stated in Malott and Whaley (1976):

Success at coping is never an all or nothing thing.

Often we're merely trading one type of stress for what we think will be a weaker, milder form . . .

Trying to cope is always a risky business. Sometimes what seems a good bargain--one that beats stress, for the moment--turns out to merely delay payment . . .

(p. 495).

For bulimics, the delayed payment might be physiological damage, consistent disruption of normal daily activities, increased isolation, and reduced opportunity to learn more adaptive and effective responses for dealing with the stress in their lives.

From a behavioral perspective, Skinner (1953) defined anxiety as the strong emotional response elicited by a stimulus which characteristically preceded a strong negative reinforcer. Skinner further stated that "avoidance responses may be

interpreted as in part an escape from the emotional components of anxiety" (p. 179). Skinner's analysis could have accounted for one instance of bulimic responding as follows: when the bulimic attempted to avoid social disapproval by emitting overly compliant, inaccurate, or unassertive verbal behavior, she was responding on a schedule of negative reinforcement with disapproval acting as a learned stressor or conditioned negative reinforcer.

An analysis of the bulimic's attempts to avoid learned stressors and escape from an increase in levels of emotional behavior revealed complex consecutive schedules of negative and positive reinforcement. The binge-purge cycle might be formulated behaviorally as follows: a predisposing history of reinforcement combined with a particular environmental event (i.e., learned stressor or conditioned negative reinforcer) elicited emotional behaviors in the bulimic individual. This emotional behavior, correlated with the learned stressor, led to avoidance and escape behaviors or movement away from the learned stressor as well as movement toward the positive reinforcer of food, resulting in a binge episode. The subsequent feelings of pressure in the abdomen from excessive eating led to the escape behaviors of purging, primarily vomiting. The act of vomiting led to a subsequent reduction in abdominal pressure and possible weight loss. Engaging in vomiting behaviors, however, included the immediately aversive



side effects of vomiting (e.g., physical discomfort, bad taste in mouth) and subsequently led to medical complication.

That the vomiting behavior was maintained implied the aversive stimulation from vomiting was overridden by the negative reinforcement from a reduction in abdominal pressure. Russell's (1979) patients reported that with repeated practice, the act of vomiting became effortless. Although vomiting behavior further led to potentially dangerous medical complications, those consequences were too far removed in time from the act of vomiting to have had an effect on the bulimic behaviors.

Current treatments of stress-related disorders have included relaxation (Hamberger, 1982; May, House, & Kovacs, 1982), humor (Safranek & Schill, 1981), social skills training (Frisch, Elliott, Atsides, Salva, & Denney, 1982), cognitive-restructuring (Altmaier, Ross, Leary, & Thornbrough, 1982), imagining pleasant scenes (Pelletier, 1977), in vivo exposure to phobic stimuli (Hand, Lamontagne, & Marks, 1974), and self-instruction (Meichenbaum, 1974). Of particular interest was the treatment technique developed by Meichenbaum (1974) termed stress-inoculation training in which the treatment helped to inoculate the client against stress, i.e., had her acquire the skills to deal with stress in general. The three goals of stress inoculation were to (1) educate the client about the nature of stress, (2) have the client

rehearse various coping behaviors, and (3) give the client the opportunity to practice new coping skills in a stressful situation.

Meichenbaum's stress-inoculation training package included the following guidelines: tailoring coping techniques to individual styles, providing and fostering flexibility, training cognitive and direct action coping skills, and providing training experiences through imaginal and in vivo work. Stress-inoculation training has been used with speech-anxious students (Altmaier, Ross, Learly, & Thornbrough, 1982), in pain research (Horan, Hackett, Buchanan, Stone, & Stone, 1977; Meichenbaum & Turk, 1976; Meichenbaum, Turk, & Bernstein, 1975), and in anger research (Meichenbaum & Turk, 1976; Novaco, 1977). The results of these studies seemed to support the utility of the training package in the treatment of stress. The basic elements of stress-inoculation training seemed applicable to the development of a treatment program for teaching bulimics alternative responses for coping with stress.

Prior to the development of such a treatment program, a further review of recent bulimia treatment studies revealed a surprising feature--the apparent responsiveness with which the patients approached treatment. Loro and Orleans (1981), Russell (1979), and Dooley (1982b) have documented the bulimic patient's lack of cooperation in treatment. Davison (1973)

has reported counter-control as a generalized phenomenon extant in most client-therapist relationships. This might be viewed as a somewhat puzzling phenomenon, based on the previously-mentioned historical information that described bulimics as overly compliant individuals. While the bulimic's initial reactions to treatment suggestions or guidelines often appeared compliant, they occasionally acted in a deceptive manner, contrary to the targeted goals (Dooley, 1982b).

These contradictory findings might have been partly explained by the observation that much of the treatment to date with bulimics has focused specifically on modifying one aspect of the binge-purge chain. Given the information presented by Loro and Orleans (1981), Russell (1979), and Dooley (1982b) concerning lack of cooperation, those studies that have attempted to alter one of the responses in the bulimic's binge-purge chain may have inadvertently presented inaccurate data, thereby giving the appearance of compliance. Even when the only consequence for reporting bulimic behaviors was social disapproval, Dooley (1982b) noted a tendency for the bulimics to distort their data. This distortion might have been due to concurrent negative reinforcement schedules. In addition to bulimic behaviors as avoidance responses (i.e., negatively reinforced behaviors), inaccurate reporting of bulimic activities may also have been negatively reinforced, with the clinician's disapproval acting as the conditioned negative reinforcer. A treatment program that focused on

dealing with the possible antecedent events of stressful situations rather than consequating any of the actual binge-purge behaviors could help preclude the patients' tendencies for falsifying their data and, additionally, seemed the most feasible for work with outpatients.

A highly understandable trend in the outpatient bulimia studies conducted thus far has been the reliance on self-report data. While Simkins (1971a) has referred to difficulty in evaluating documented therapy successes using self-report procedures, it has often been a feature of clinical intervention that it might not be possible to externally validate all relevant behaviors. Jeffrey (1974a) studied the effects of a monetary deposit on the accuracy of client self-reports. Results showed that subjects in a refundable deposit condition cheated significantly less than the subjects in the nonrefundable group. A refundable deposit made contingent on group attendance and accuracy of weekly data might increase the probability of truthful reporting by outpatients. Systematically recorded data could facilitate a more fine-grained analysis of changes occurring in the behavior of individual subjects.

Many of the combined treatment studies conducted thus far have closely resembled standard behavior therapy where many techniques are used in conjunction with one another to affect a change. Most of these studies have shown the bulimic patient's deficits in handling stressful situations. The

combination of treatment techniques, however, has not made clear which component was critical in affecting change.

The purpose of the present study was to determine whether teaching bulimic outpatients alternative responses for dealing with stressful events would affect their bulimic behaviors. The treatment program attempted to increase the bulimic's ability to deal with stressful stimuli in a less harmful, more adaptive manner by increasing the number of alternative responses that she might emit. This research was concerned with only one aspect of the contingency affecting bulimic behaviors--the antecedent events acting as stimuli for the binge-eating response. Analyzing only one of the treatment components might allow for more efficacious treatment in the future. A systematic data collection with a monetary contingency for accuracy could also aid in analyzing the relationship between the occurrence of the disorder and the changes with treatment. An additional aspect of this study was to determine if bulimic women would show particular groupings of historical variables in their responses to a biographical inventory.

The hypotheses tested in this study were as follows.

- 1) Bulimic individuals in the alternative stress response group will show a significantly greater decrease in their binge-eating episodes within six weeks than will the control group.
- 2) Bulimic individuals in the alternative stress response group will show a significantly greater change in the positive

direction subsequent to treatment than will the control group, as measured by the Coping Skills Test.

3) Bulimic individuals in the alternative stress response group will demonstrate a significantly greater reduction in their scores on the state anxiety scale of the Self-Evaluation Questionnaire subsequent to treatment than will the control group; scores on the trait anxiety scale will not change significantly for either group.

#### Method

##### Subjects

Subjects for the study were drawn from the general population of females over the age of 18 from two Southwestern cities. Forty-four females responded to posted notices and classified newspaper advertisements concerning the proposed treatment research. Of these forty-four women, twenty-eight completed the screening procedure (i.e., a clinical interview and the completion of two paper-and-pencil assessment instruments, and the Binge-Eating Questionnaire and the Life Events Questionnaire) and met the DSM-III criteria for bulimia. The criteria were modified slightly to include only those subjects whose binge-eating frequency was a minimum of three times weekly. Subjects with a prior history of anorexia nervosa were excluded from the study and given the names of various area agencies that offered treatment. Potential subjects were also screened for suicidality; none reported having any recent suicidal thoughts.

Subjects ranged in age from 18 to 35. Twenty of the subjects were single, three were married, and three were divorced. All subjects were either college students or had graduated from college. Ten of the 14 women in each condition were currently undergraduate students.

Fourteen subjects were randomly assigned to each of two treatment conditions. One subject from each condition dropped out of the study after attending for two weeks. One of the dropouts stated she did not have enough time to continue attending the group meetings; the other said she was not ready to "give up bingeing." The remaining 26 subjects completed the study.

### Instruments

Seven assessment devices were used in this research: four self-report measures (Binge-Eating Questionnaire, Imagery Questionnaire, Self-Evaluation Questionnaire, and Treatment Survey), one biographical inventory (Life Events Questionnaire), one structured interview (Coping Skills Test), and one on-going behavioral data collection. The Binge-Eating Questionnaire, the Life Events Questionnaire, and the Treatment Survey were administered prior to treatment while the Coping Skills Test and the Self-Evaluation Questionnaire were administered before and after treatment. Daily binge-eating data collection began two weeks prior to the first treatment session and continued throughout the six-week treatment program. Imagery questionnaires

were administered to the alternative stress response group after each imagined scene during treatment sessions.

Binge-Eating Questionnaire. Halmi et al. (1981) developed this 23-item instrument to obtain information from a college population regarding sex, age, and physical stature (including weight changes and history of highest and lowest weight), use of diet aids and medication, and the behavioral indices of bulimia as defined by the DSM-III.

Factor analysis of the questionnaire showed six clusters of variables with the first factor representing the clustering of weight variables. The second factor revealed the clustering of the main symptoms of bulimia, including labelling oneself a binge-eater, admitting having had uncontrollable urges to eat, having engaged in binge-eating episodes, feeling miserable and annoyed after binge-eating, and having a fear of not being able to stop eating.

The third factor represented vomiting with a weak loading on laxative use, while the fourth factor clustered the variables of the respondents' height and opinion of their weight. The fifth factor consisted of weight change within one year, and the sixth factor, use of diuretics, emerged as a stand-alone variable, indicating a questionable relationship with either bulimia or vomiting.

In this study, the Binge-Eating Questionnaire was used as a screening device to establish the diagnosis of bulimia and to determine the frequency of binge-eating episodes.



The instrument also allowed for screening of a prior history of anorexia nervosa.

Life Events Questionnaire. Dooley (1982b) developed this 47-item biographical inventory as an inpatient screening device for both bulimic and anorectic patients (See Appendix A). Information requested included weight, medical, social, and family histories, an evaluation of those behaviors associated with eating disorders, and the patient's range of affective responses. The questionnaire was used in this study in an attempt to determine a cluster of life events that may be correlated with the occurrence of bulimia.

Coping Skills Test. A behavioral sampling instrument was developed to assess the subjects' responses to six audio-taped situations (See Appendix B). These scenarios represented those situations thought to be stressful for most bulimics and were derived from examples documented in the literature (Boskind-Lodahl, 1976; Boskind-Lodahl & Sirlin, 1977; Boskind-White & White, 1983; Pyle et al., 1981; Russell, 1979; Dooley, 1982b) and from the author's clinical experience. Stressful events included were personal rejection, lack of assertiveness, social pressures, failure to meet personal high standards, and the likelihood of responding inappropriately to food stimuli through binge eating.

The Coping Skills Test was administered prior to the first treatment session and after the final group meeting. The

scenarios were audiotaped and presented to each subject individually. Subjects were instructed to respond as though they were actually in the situation. At the end of each described scene, the subjects reacted to the question "What do you do or say?". Subjects' responses were tape recorded and later transcribed for rating.

Three scoring measures were used to assess each response to a scene: specificity, effectiveness, and variability. Specificity of response was scored on a 4-point scale (1 = "not specific", 4 = "very specific"). Scoring was based on the clarity of the subject's description of her behavior. A rating of 4 was given when the subject described her behavior clearly enough that another person could perform a very close approximation; i.e., "I would walk away from the refreshment counter and go find my seat in the theater" was more specific than "I wouldn't give in." Effectiveness of response was scored on a 4-point scale (1 = "very ineffective", 4 = "very effective") and was defined as the degree to which the subject's response was likely to be effective in precluding a binge-eating episode. Variability was rated as to the apparent flexibility and extensiveness of the subject's coping skills repertoire and scored by giving one point for each different response form stated. Following the test administration, each subject's responses were blind-rated by two independent judges as to specificity, effectiveness, and variability.

Self-Evaluation Questionnaire. Spielberger, Gorsuch, and Luschene (1970) developed this 40-item scale also known as the State-Trait Anxiety Inventory as a research instrument for investigating anxiety phenomena. The Self-Evaluation Questionnaire was comprised of two separate self-report scales for measuring the concepts of state anxiety (A-State) and trait anxiety (A-Trait). The A-Trait scale consisted of 20 statements asking the respondent to report how she generally felt, while the 20-item A-State scale asked the subject how she felt at that moment of responding to the item. Trait anxiety referred to the relatively stable probability of a person's responding to the world with an elevated state of arousal; state anxiety referred to the varying probability of a person's anxious responding as a function of a particular setting or event.

When evaluated for reliability, the test-retest correlations for the A-Trait scale were relatively high, ranging from .73 to .86. As anticipated by Spielberger et al. (1970), the correlations were much lower for the A-State scale, ranging from .16 to .54, apparently because of the influence of situational factors at the time of each testing. The alpha coefficient was therefore used to measure internal consistency; these reliability coefficients ranged from .83 to .92 for the A-State scale.

Concurrent validity of the A-Trait scale was evaluated by correlations with the IPAT Anxiety Scale and the Taylor

Manifest Anxiety Scale. The correlations between the Self-Evaluation Questionnaire and the IPAT and between the Self-Evaluation Questionnaire and the TMAS were moderately high, .77 and .83, respectively. Validity for the A-State scale was assessed in a study in which the scale was given to 197 undergraduate students under four different experimental conditions. The mean scores for both males and females increased according to the stressfulness associated with the four conditions (relaxation, normalcy, examination, and stressful movie). The Self-Evaluation Questionnaire was used in this study to evaluate changes in the bulimics' reported levels of emotional behavior subsequent to treatment.

Treatment Survey. This instrument was based on suggestions by Kazdin and Wilcoxin (1976) and was devised by the author to assess whether or not subjects in the various groups thought they were receiving a credible treatment for their problem behaviors (See Appendices C and D). The instrument was administered during the first treatment session, following a description of the treatment rationale for the group.

The survey consisted of three questions: 1) to what extent does the treatment seem logical?, 2) how successful do you think you will be in changing your behaviors using this treatment?, and 3) how strongly would you recommend this treatment to a friend with the same problem behaviors, knowing what you know now?

Binge-eating data collection. All subjects were required to record the following behaviors as each occurred: 1) binge episode, defined as the rapid consumption of a large quantity of high-caloric, easily ingested food within a relatively brief time period, 2) vomit episode, defined as the voluntary regurgitation of food, 3) laxative use, defined as the ingestion of any over-the-counter or prescribed medication designed to promote the evacuation of the bowels, and 4) diuretic use, defined as the ingestion of any over-the-counter or prescribed medication designed to promote the secretion of urine. A 24-hour monitoring sheet delineating hourly blocks from Monday through Sunday was given to each subject (See Appendix E). Subjects were provided a blank monitoring sheet at every session for the subsequent week.

In addition to recording frequency of bulimic behaviors, subjects also listed the foods eaten during one of their typical binge episodes occurring each week. In their food diary, subjects documented the type(s) of food and approximate amount(s) eaten. This data was collected for an informal analysis of possible changes in the amount or kinds of food eaten during binge episodes.

Imagery Questionnaire. One important component of the treatment for the alternative stress response group was the subject's ability to imagine the described scenes. In order to assess whether subjects imagined the scenes being described as well as whether the images were clear, a short questionnaire

was given following each scene presentation (See Appendix F). Two self-report scores were derived from the Imagery Questionnaire: clarity (rating on a scale from 1 to 5 how clearly the subject imagined the scene) and complexity (rating on a scale from 1 to 5 how much of the scene the subject imagined). The questionnaire also allowed the subjects to record key descriptors as cues for later discussion of their imagined response.

#### Procedure

Eligible subjects were randomly assigned to two different treatment conditions: an alternative stress response group and an experiential discussion group. Two alternative stress response and two experiential groups were formed to limit group size. Each treatment condition had one group of six and one group of seven members. All subjects were administered the Binge-Eating Questionnaire and the Life Events Questionnaire as screening instruments. The Coping Skills Test, the Self-Evaluation Questionnaire, an Informed Consent form (see Appendix G) and the Treatment Survey were administered before treatment began. The Coping Skills Test and the Self-Evaluation Questionnaire also were administered to all subjects after the final treatment session. Imagery was assessed at each treatment session for the alternative stress response groups.

Subjects in all groups were required to record the frequency of binge-purge episodes occurring on a daily basis and keep food diary entries for binge episodes, one per week.

During the two weeks of baseline data collection, subjects met briefly to turn in their weekly data. For the remainder of the study, each group met for 1½ hours weekly for 6 weeks. Data were collected at the beginning of each group but were not discussed.

Members of both groups were required to bring a refundable deposit of \$28 to the first meeting. These monies were used as reinforcement for weekly attendance and accurate data collection. Subjects were told that they each could earn \$1.50 for attendance and \$2.00 for the weekly data collection. Each subject was informed that only she was responsible for deciding whether or not she had recorded her data accurately, thereby determining whether or not she had earned the \$2.00.

At the end of each group meeting, each subject was given a small envelope containing her possible earnings for the week. Each subject was left alone in the room, allowing her to remove the amount she had earned for the week. She then sealed her envelope and placed it in a large manilla envelope. This procedure was done each week with each subject, with the understanding that all unearned monies would be returned at the end of the study.

Alternative Stress Response Group. In the first session of the group, members introduced themselves and then heard a brief rationale for the alternative stress response training procedure that would occur in succeeding sessions. Bulimic behaviors were formulated as highly probable responses to stressful situations. Subjects were told that by increasing

their repertoire of adaptive alternative behaviors for stress-related events, they could reduce the likelihood of binge-eating.

During the weekly group meetings, subjects heard a taped description of a scene which was designed to create a stress reaction (tendency to binge) (See Appendix H). Subjects were instructed to close their eyes and imagine the described scene as well as what they would do or say in response to the imaginal stimuli. Subjects were allowed several minutes following the taped presentation to imagine their responses. At the end of the imagery period, subjects were asked to open their eyes and quickly complete the imagery questionnaire, rating their ability to imagine the scene clearly and allowing them to record key descriptors of their response to the scene.

Following this procedure, each group member described her response to the taped presentation and then participated in a group discussion of possible alternative responses. After each subject had the opportunity to discuss her actions in the scene and generate possible alternative responses, the subjects again were asked to close their eyes and listen to the same scene. For the second presentation, subjects were cued to choose one of the recently discussed alternative responses as their imaginal responses to the situation. Following the taped presentation, each subject filled out the imagery questionnaire for her latest imagined reaction. Individuals in the group then took turns describing their second response. The subsequent discussion allowed for



problem-solving with individual group members, including a generalized discussion of their responses and those aspects of the problem situation that might serve as cues for alternative responses in similar future situations.

A different problem scene was presented during each of four weekly meetings; however, the above-described image-and-discuss format was held constant. For the final two treatment sessions, the procedure was changed slightly: group members were asked to imagine a difficult situation that had actually happened rather than listen to a taped scene. This change from a taped presentation allowed subjects to incorporate highly individualized stressful scenes into the training format and to increase the probability of generalization of the newly-learned alternative responses to their particular problem situations. The remainder of the procedure did not change.

Following the final week of treatment, the group met one additional time for re-assessment with the Coping Skills Test and the Self-Evaluation Questionnaire. Their last week's data also were collected and any remaining monies from the refundable deposit were returned at this time. In addition, group members were given the opportunity to say goodbye to one another in a structured setting.

Experiential Group. The primary purpose of this group was to control for the experimental variable of weekly group meetings. The first session of the experiential group began

with member introduction. The leader then gave the rationale for the treatment, i.e., ending the secrecy surrounding their maladaptive behaviors through group meetings could prove beneficial to them as individuals. In addition, the subjects were told that subsequent group discussion of any self-defined significant event occurring in their daily lives could be a helpful mechanism for self-expression and self-exploration. The resulting increase in self-awareness could facilitate more effective dealings with their maladaptive behaviors. In the remainder of the first meeting, each member discussed those events in her life that were influential in her decision to join the group.

In the remaining sessions, group members were encouraged to initiate discussions of relevant life events, with focus directed toward whether similar events had affected other group members. Any discussion of bulimic behaviors was re-directed toward the individual's reactions to those events that preceded or followed the binge episodes. The leader suggested that increasing their awareness of all possible factors would facilitate their understanding of why they binged.

Following the final week of treatment, the group met one additional time for re-assessment with the Coping Skills Test and the Self-Evaluation Questionnaire. The last week's data were collected and any remaining monies from the refundable deposit were returned at this time.

## Results

Responses to questions on a biographical inventory (Appendix A) showed a particular cluster of events for the subjects in this study. Subjects reported the duration of their eating disorders ranged from six months to twenty years, with slightly over one-half (62%) of the women previously seeking treatment for bulimia. After ending the secrecy surrounding their bulimia by revealing the problem to friends, family members, or spouse, 81% of the subjects reported that the attitudes of other people affected their subsequent binge behaviors. Forty-six percent of the women stated they felt increased anger, discomfort, guilt or anxiety in conjunction with binge eating and binged more frequently, while only 27% said they tried harder to control bulimic behaviors because of the encouragement they received.

A majority of the women (58%) in the study reported they felt overweight while only two would have actually received a label of overweight based on the height and weight tables from the Metropolitan Life Insurance Company. The remaining subjects who stated they were average weight (31%) were typically at the lower end of the established weight ranges. The women in the study stated they tried to counter the effects of their binge-eating episodes with vomiting (77%), diet pills (46%), laxative use (38%), and/or diuretics (27%). An informal analysis of the subjects' food diaries showed that the types of food eaten stayed stable across time. During the course of the study,

however, subjects reported a slight decrease in the amounts of food eaten during binge episodes. Subjects stated that binge-eating affected their daily activities: some (31%), often (42%), and extremely (27%). A majority of the women (65%) said their bulimic behaviors impaired family or work relationships or job performance.

The degree to which bulimic activities affected the subjects' emotional behaviors and self-confidence varied, but all reported some reaction. When reporting increased depression, 12% said they experienced a moderate effect; 23%, quite a bit; and 62%, an extreme effect. Regarding increased anxiety, 27% stated a moderate change; 31%, quite a bit; and 23%, extreme changes. Ninety-six percent of the subjects claimed a lack of self-confidence: 7% indicated a moderate lack; 27%, quite a bit; and 62%, an extreme lack.

Data from the Treatment Survey Form (Appendices C and D) revealed no significant difference between groups concerning subjects' expectations for the proposed treatment's effectiveness ( $t = .15$ ,  $p > .05$ ). Mean scores were 12.7 and 12.6 for the alternative stress response and experiential groups, respectively. Regarding the first hypothesis, the daily binge-eating data were analyzed using an analysis of variance. No significant difference within groups ( $F(7,168) = 1.5$ ,  $p > .05$ ) nor between groups ( $F(1,24) = .33$ ,  $p > .05$ ) across time was found. Subjects in the alternative stress response group reported they were honest with their self-report data 91% of the time; subjects in the experiential group reported accuracy 87% of the time.

When questioned at the end of the study, subjects stated their reported dishonesties were due either to an indecision about whether to classify an eating episode as a binge or to an underestimate of actual binge episodes during a week's time. Data from the Imagery Questionnaire used in the alternative stress response group (Appendix F) showed that subjects were able to imagine the audiotaped scenes adequately for 9% of the presentations, clearly for 47%, and very clearly for 44%. Subjects' ratings showed they were able to imagine the scene in its entirety 52% of the time and almost all of the scene 48% of the time.

Two clinicians independently rated each subject's responses on the Coping Skills Test (Appendix B), judging the dimensions of specificity, effectiveness, and variability of behavior. Interrater reliability was 85%, 89%, and 95%, respectively. Mean scores were used for data analysis when ratings differed. Data for each dimension of the responses were analyzed using analyses of covariance, with pretreatment responses as the covariates. Regarding the second hypothesis, no significant difference was found for specificity ( $F(1,23) = .02, p > .05$ ), effectiveness ( $F(1,23) = .30, p > .05$ ), or variability ( $F(1,23) = .17, p > .05$ ).

Scores on the state and trait anxiety scales of the Self-Evaluation Questionnaire were analyzed using analyses of covariance with pretreatment responses as the covariates. In regard to the third hypothesis, no significant difference

between groups was found for the state anxiety scale ( $F(1,23) = .39, p > .05$ ) or for the trait anxiety scale ( $F(1,23) = .01, p > .05$ ).

#### Discussion

The present study does indicate that bulimic individuals show some similarity across responses on a biographical inventory (Appendix A). In accordance with findings previously reported in the literature (Pyle et al., 1981; Russell, 1979), many of the subjects in this study also report feeling overweight although the majority weigh within normal range. Similar to findings from studies by Fairburn (1980) and White and Boskind-White (1981), the subjects use vomiting, diet pills, laxatives, diuretics, and/or fasting to counter the effects of binge episodes and claim impaired interpersonal relationships and job performances.

Casper et al. (1980), Fairburn (1980), Garfinkel et al. (1980), Guiora (1967), Hsu and Crisp (1980), Johnson and Larson (1982), Mitchell and Pyle (1982), Palmer (1979), Pyle et al. (1981), and Russell (1979) report marked emotional lability as prevalent among bulimics; bulimics in this study indicate they experience changes in mood in conjunction with binge episodes. Subjects in this study also state that their bulimic behaviors are affected by other people's reactions to their eating disorder. Unfortunately, the reported effects tend to be an aggravation of the emotional behaviors that appear to accompany binge eating (i.e., guilt, anxiety, anger) and result in a subsequent increase in binge eating.

Fairburn (1981), Linden (1980), Long and Cordle (1982), and Meyer (1973) report significant decreases in individual outpatients' bulimic behaviors; their treatments, however, include a variety of techniques, thereby preventing a determination of which components are most relevant. The present study focuses on only one treatment technique. The findings do not support the hypothesis that learning alternative responses to stressful situations will decrease binge-eating episodes.

One possible factor in the lack of change reported in the binge-eating data may be the absence of specific instructions to apply the alternative responses being learned. The assumption that individuals seeking behavior change will make use of the techniques discussed in therapy is implicit within any treatment program. Some patients, however, see their coming to treatment as a panacea for all their problems. They report thinking that simply attending a weekly session will end their bulimic behaviors. These women may not be likely to apply whatever coping techniques are discussed in treatment sessions. Findings in this study, therefore, suggest that explicit instructions to apply newly learned behaviors may be necessary.

Specific instructions, however, may be necessary but not sufficient for behavior change to occur. Those individuals who realize that they need to make use of treatment suggestions are still faced with the problems inherent in any therapy--recognizing when to apply the suggested techniques, knowing how

to use them, and being consistent with applying them. While many treatment suggestions potentially might be very useful, the individual must actually be able to implement them before change can occur. The current literature on bulimia does not report dealing with this critical factor in behavior change.

The patterns of binge-eating behavior shown by subjects in this study may be indirectly related to the screening process. The current criteria for bulimia (APA, 1980) includes an imprecise definition of a binge episode. While Mitchell et al. (1981) report caloric intake during binge episodes ranging from 1200 to 11,500 calories, there is no minimum quantity and/or caloric value currently in use as guideline(s) in defining a binge. Using an imprecise definition during screening may bias the population of subjects, thereby affecting the data generated in the study. Many of the subjects in both groups are uncertain as to whether an eating episode is a binge or simply a meal or snack. The most consistent factor in binge episodes seems to be the accompanying emotional behavior: subjects record binge-eating based on the concomitant emotional discomfort which often results in strong desires to purge. The reported difficulty in labelling binge episodes may therefore result in inaccurate data.

Other aspects of the screening process may also relate to patterns in the binge-eating data. Frequency of binge-eating episodes, duration of the disorder, and the typical purging method(s) may all have an effect on an individual's responsivity



to treatment. The above-mentioned screening variables might limit the generalization of results reported in the literature. Without further specification concerning these variables, current research may be reporting on heterogeneous populations and efforts to develop effective treatment paradigms may thereby be hampered.

Length of treatment may be an additional variable that affects the results regarding the binge-eating data. Treatment studies cited in the literature range from 7 weeks to 1 year; this study involves 8 weeks (2 weeks of baseline, 6 weeks of treatment). A longer treatment might facilitate behavior change by allowing for greater practice of the newly learned behaviors.

Results also do not support the second hypothesis that members of the alternative stress response group will show a significantly greater change in the positive direction on the Coping Skills Test (Appendix B) than will the experiential group. The Coping Skills Test (Appendix B) allows the subjects to state how they might respond in a specified stressful situation. The lack of change on this measure parallels the lack of change shown by the daily binge-eating data. Apparently the subjects' manner of thinking about how to respond differently to stress situations does not change any more rapidly than their actual eating behavior. The possibility exists that thinking or talking about changing bulimic behaviors as well as actually altering the binge response may be related to similar variables. These include the duration of the study and the lack of explicit instructions.

A treatment longer than 8 weeks may facilitate a positive change in the way subjects talk about their current or future behaviors by allowing more practice with those behaviors. Subjects may also need explicit instructions to spend extra-therapy time thinking of ways to deal actively with stressful situations. Otherwise, they may only think of possible alternatives when they are in the structured environment of the group, not when they are thinking of bingeing. Additionally, the subjects' lack of change in how they think or talk about responding to possible stressful situations may be related to the actual lack of change in binge-eating episodes seen in this study. Thinking or talking about ways to change their responding may seem futile if the women are aware that their binge behaviors are not changing.

Results also do not support the third hypothesis which states that alternative stress response group will significantly reduce scores on the state anxiety scale of the Self-Evaluation Questionnaire. Results do support the hypothesis that neither group will change scores on the trait anxiety scale. The lack of change on the state anxiety scale is somewhat surprising. Mechanic (1968) emphasizes the importance of practice, experience, and familiarity when dealing with stressful situations. The anticipated progression is that subjects may be slightly uncomfortable and anxious during the first few treatment sessions but become less so as they habituate to the treatment format, the therapist, and the setting. This progression apparently does not readily occur with bulimic subjects.

Subjects' feedback during the final meeting includes some indications of emotional responding: "dreading to come to group" because of the implicit or explicit focus on their eating disorders, "knowing they need to come" each week, and usually "feeling better" after attending a weekly session. Some subjects, however, report either wanting to binge or engaging in a binge episode before or after group meetings. This information suggests an approach-avoidance conflict regarding treatment. The treatment itself may function as a stressor, thereby eliciting emotional responding.

The treatment as a stressor may relate to factors common to bulimic patients: the tendency for secrecy, the strong desire to please others, and the persistent striving to reach high standards, often in an all-or-nothing fashion. After being secretly bulimic for many years, discussing their behaviors with others may aggravate their level of emotional responding and increase the likelihood of reporting anxiety. As suggested by Dooley (1982a), the clinician is often seen as an authority figure, thereby becoming someone to please. The most obvious way to please the clinician may seem to be by decreasing bulimic behaviors. The bulimic's level of anxious responding may therefore relate to disclosing the continued occurrence of binge-eating episodes to someone in authority. In addition, the women's inability to completely end their bulimic behaviors may mean absolute failure according to their high standards and further aggravate their emotional responding.

If these factors are indeed in effect, scores on both the state and trait anxiety scales are not likely to change quickly.

Based on the discussion, there are several changes that might improve future research with bulimic subjects: a) operationalize the definition of a binge episode; b) delineate the population of subjects according to the frequency of binge-eating episodes, the duration of the disorder, and the typical purging methods; c) include specific instructions for applying the techniques learned during treatment sessions; d) extend the treatment beyond 8 weeks; and e) include anxiety-reduction training as part of the treatment package.

In summary, the primary assumptions underlying this study are that binge-eating behaviors are typically emitted in reaction to stressful stimulation and that learning a more adaptive coping response to stress will help reduce the frequency of binge episodes. Findings from this study do not confirm the research hypotheses but do make other potentially relevant variables more apparent. Whether or not suggested changes might produce more definite answers remains an empirical question.

Appendix A

Life Events Questionnaire

Name: \_\_\_\_\_ Sex: M F Age: \_\_\_\_\_ Birthdate: \_\_\_\_\_

Address: \_\_\_\_\_ Home Phone: \_\_\_\_\_

\_\_\_\_\_ Office Phone: \_\_\_\_\_

WEIGHT HISTORY:

1. Your present weight \_\_\_\_\_ height \_\_\_\_\_
2. At what weight have you felt your best or do you think you would feel your best? \_\_\_\_\_
3. What has been the most you have weighed since the age of fifteen? \_\_\_\_\_  
The least? \_\_\_\_\_
4. Do other people react to your eating disorder? Yes \_\_\_ No \_\_\_ If yes, how do they react?  
\_\_\_\_\_
5. What are the attitudes of the following people about your eating disorder?

Negative  
(e.g., disapprove,  
resentful)

Indifferent  
(e.g., don't care  
don't help)

Positive  
(e.g., encourage,  
understanding)

	<u>Negative</u> (e.g., disapprove, resentful)	<u>Indifferent</u> (e.g., don't care don't help)	<u>Positive</u> (e.g., encourage, understanding)
Husband			
Wife			
Children			
Parents			
Employer			
Friends			

6. Do the attitudes or behavior of the people listed above affect your eating disorder? Yes \_\_\_\_\_ No \_\_\_\_\_ If yes, please describe: \_\_\_\_\_

7. How do you feel your eating disorder affects your daily activities?  
(Circle one)

No effect          Some effect          Often interferes          Extreme effect

8. What do you do for physical exercise and how often do you do it?

FREQUENCY (daily, weekly, monthly)	ACTIVITY (swimming, jogging, dancing)

9. A number of behaviors are a part of an eating disorder problem. Please indicate which behaviors are applicable to you and the information requested below:

	Age	Number of times per week used	Max. Wt. lost	Comments: Have you ever tried to stop? How successful were you?
Skipping meals				
Hyperactivity				
Heavy exercise				
Laxative use				
Excessive eating (i.e., 500 calories or more between meals)				
Vomiting				
Diuretic use				
Diet pill use				
Avoidance of certain foods				
Excessive preoccupation with certain foods				
Other (please specify)				

10. Which behavior do you see as your biggest problem? \_\_\_\_\_

11. Have you had a major mood change after engaging in one of the behaviors described in question #9?

Yes \_\_\_ No \_\_\_ If yes, indicate on the following checklist those changes:

	<u>Not at All</u>	<u>A little Bit</u>	<u>Moderately</u>	<u>Quite a bit</u>	<u>Extremely</u>
a. Depressed, sad, feeling down or unhappy?	_____	_____	_____	_____	_____
b. Feeling anxious, nervous or restless?	_____	_____	_____	_____	_____
c. Feeling weak?	_____	_____	_____	_____	_____
d. Feeling elated?	_____	_____	_____	_____	_____
e. Feeling easily irritated, annoyed or angry?	_____	_____	_____	_____	_____
f. Feeling fatigued, worn out?	_____	_____	_____	_____	_____
g. Being preoccupied with food and eating?	_____	_____	_____	_____	_____
h. Feeling a lack of self-confidence?	_____	_____	_____	_____	_____

12. Has your eating disorder ever led to a physical or emotional reaction of such severity that it impaired your family and/or work relationships or functioning? Yes \_\_\_ No \_\_\_ If yes, please describe the symptoms and how long they lasted. \_\_\_\_\_  
 \_\_\_\_\_

MEDICAL HISTORY:

13. What are your present medical problems? \_\_\_\_\_  
 \_\_\_\_\_

14. What medications or drugs are you taking? \_\_\_\_\_  
 \_\_\_\_\_

15. Are you allergic to medications, drugs or foods? \_\_\_\_\_

Which foods? \_\_\_\_\_

How were you tested for these? \_\_\_\_\_

16. Please list any hospitalization or operations. Indicate your age for each hospital admission.

<u>Age</u>	<u>Reason for hospitalization</u>
_____	_____
_____	_____
_____	_____

17. Please list, by age, any serious illnesses you have had which have not required hospitalization or operations:

<u>Age</u>	<u>Illness</u>
_____	_____
_____	_____
_____	_____
_____	_____

18. Please describe any medical problems you have which are complicated by your weight. \_\_\_\_\_
- \_\_\_\_\_

19. When did you last have a complete physical examination? \_\_\_\_\_

20. Who is your current doctor? \_\_\_\_\_

21. How much alcohol do you usually drink per week? \_\_\_\_\_

22. Do you smoke? \_\_\_\_\_ If so, how much? \_\_\_\_\_

23. Please list any psychiatric contact, individual counseling, or marital counseling that you have had or are now having.

<u>Age</u>	<u>Reason for contact and type of therapy</u>
_____	_____
_____	_____
_____	_____

24. At what age did your menstrual cycle begin? \_\_\_\_\_

25. Have you ever missed your menstrual cycle? Yes \_\_\_\_\_ no \_\_\_\_\_ If yes, please specify \_\_\_\_\_



SOCIAL HISTORY:

26. Please describe your present or most recent occupation \_\_\_\_\_  
\_\_\_\_\_
27. How long have you worked/did you work for your present/previous employer?  
\_\_\_\_\_
28. Describe the physical setting (office, factory, etc.) \_\_\_\_\_
29. Circle the last year of school attended:
- |              |   |   |   |   |   |   |   |             |    |    |    |         |   |   |   |      |       |       |
|--------------|---|---|---|---|---|---|---|-------------|----|----|----|---------|---|---|---|------|-------|-------|
| 1            | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9           | 10 | 11 | 12 | 1       | 2 | 3 | 4 | M.A. | Ph.D. | Other |
| Grade School |   |   |   |   |   |   |   | High School |    |    |    | College |   |   |   |      |       |       |
30. Present marital status: (circle one)
- Single      Married      Divorced      Widowed      Separated      Engaged
31. Where do you live? (apt., house, trailer, hotel, dorm, etc.)? \_\_\_\_\_
32. Who lives there with you? \_\_\_\_\_
33. How is your dwelling heated? (gas, electricity, woodstove) \_\_\_\_\_
34. Is your father living? Yes \_\_\_\_\_ No \_\_\_\_\_ Father's age now or age and cause of death: \_\_\_\_\_
35. Is your mother living? Yes \_\_\_\_\_ No \_\_\_\_\_ Mother's age now or age and cause of death: \_\_\_\_\_
36. Describe your father's occupation \_\_\_\_\_
37. Describe your mother's occupation \_\_\_\_\_
38. Describe your father's weight while you were growing up: (circle one)
- |            |            |         |             |             |
|------------|------------|---------|-------------|-------------|
| very       | slightly   | about   | slightly    | very        |
| overweight | overweight | average | underweight | underweight |
39. Describe your mother's weight while you were growing up: (circle one)
- |            |            |         |             |             |
|------------|------------|---------|-------------|-------------|
| very       | slightly   | about   | slightly    | very        |
| overweight | overweight | average | underweight | underweight |
40. Please describe your family attitudes toward food and eating while you were growing up:  
\_\_\_\_\_  
\_\_\_\_\_

41. Were your parents ever separated or divorced? Yes \_\_\_\_\_ No \_\_\_\_\_  
 If yes, how old were you? \_\_\_\_\_

42. Who raised you as a child? \_\_\_\_\_

43. What was your relationship with your father like? (circle one)  
 Excellent            Good            Average            Below Average            Poor

44. What was your relationship with your mother like? (circle one)  
 Excellent            Good            Average            Below Average            Poor

45. Please list your brothers' and sisters' ages, sex, present weight, height, and circle whether they are overweight, average, or underweight.

<u>Age</u>	<u>Sex</u>	<u>Weight</u>	<u>Height</u>	<u>Overweight</u>	<u>Average</u>	<u>Underweight</u>
___	___	_____	_____	very slightly	average	slightly very
___	___	_____	_____	very slightly	average	slightly very
___	___	_____	_____	very slightly	average	slightly very
___	___	_____	_____	very slightly	average	slightly very

46. Has anyone in your family ever been in treatment for a psychiatric disorder? Yes \_\_\_\_\_ No \_\_\_\_\_ If yes, please indicate what kind of disorder and the form of treatment, if any, that was employed. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

47. Please write any other information you feel is relevant to your eating disorder below. This would include interactions with your family and friends that might sabotage an eating disorder program, or any part of your family history that is related and/or relevant to your eating disorder.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## Appendix B

## Coping Skills Test

1. You're out by yourself, doing some shopping. You've just eaten a meal in a restaurant that seemed to be filled with couples or threesomes. You felt pretty lonely and isolated, seated there by yourself and now that you've left the restaurant, you don't feel like the meal really satisfied you. You see another food place just ahead of you. What do you do or say?
2. You haven't binged in quite some time and are feeling very proud of your self-control. Part of your self-control strategy has been to completely avoid your problem foods. You feel so good, in fact, that you begin to think that you've finally conquered those urges to eat and eat and eat. You decide you'll give yourself a little test, just to see if you really are in control. You find yourself at a food store, standing in front of a selection of your favorite binge foods. What do you do or say?
3. You're at a party with some friends. Everyone has brought something to eat, and the table is full of munchies--plus there's an open bar. You see a guy you're very attracted to, talking with some of your friends. You're a little nervous about approaching him, but you decide to take the risk anyway. As you say hello to the group, he doesn't seem to even notice you. As a matter of fact, he leaves shortly after you've joined the group and goes to talk with another woman. You feel like you're suddenly the Invisible Woman. What do you do or say?

4. You've been working long hours on an important assigned project for class or work. You think you've done a pretty good job on it, but you're a little anxious about how your professor or boss might evaluate it. You take it to his office and he says, "I can't believe this--you completely misunderstood my instructions!" What do you do or say?

5. You're alone at your residence--be it dorm room, apartment, or house. You've got a thousand and one things to do--nothing really heavy, but a lot of little things that need to be taken care of. There's so much to do, in fact, you don't even know where to begin. As you are thinking about where to start, you begin to feel very pressured. Instead of getting to work, you find yourself looking through the cabinets for something to eat. What do you do or say?

6. You have a close friend who has--as she or he describes it--"a healthy appetite." Occasionally the two of you will go out to eat and you always seem to eat the same amount your friend eats or more. He or she usually makes some comment on your being able to eat so much but not gain weight. You feel pretty sure that your friend does not know that you are bulimic, but may suspect it. The two of you are at a restaurant once again and your friend has decided on the all-you-can-eat buffet. What do you do or say?

## Appendix C

## Treatment Survey

## Alternative Stress Response Group

Please read the explanation below and then answer the three questions that follow by circling your response:

The treatment/research study in which you have agreed to participate will focus on increasing your ability to interact successfully with your environment. For many people, bulimic behaviors may be related to the amount of stress in the environment and the ability to deal with that stress effectively. By increasing your repertoire of adaptive, alternative behaviors for stress-related events, you may be able to reduce the likelihood of engaging in bulimic behaviors.

(1) To what extent does the treatment seem logical?

Not at all      Slightly      Moderately      Fairly      Extremely

(2) How successful do you think you will be in changing your behaviors using this treatment?

Not at all      Slightly      Moderately      Fairly      Extremely

(3) How strongly would you recommend this treatment to a friend with the same problem behaviors, knowing what you know now?

Not at all      Slightly      Moderately      Fairly      Extremely

## Appendix D

## Treatment Survey

## Experiential Group

Please read the explanation below and then answer the three questions that follow by circling your response:

The treatment/research study in which you have agreed to participate will focus on increasing your ability to interact successfully with your environment. For most bulimic individuals, secrecy is a typical aspect of the binge-eating cycle. Ending this secrecy through attending group meetings is the first step toward change. In addition, group discussions of significant events in your daily life can be a helpful mechanism for self-expression and self-exploration. The resulting increase in self-awareness may facilitate more effective dealings with the events surrounding bulimic responding.

(1) To what extent does the treatment seem logical?

Not at all      Slightly      Moderately      Fairly      Extremely

(2) How successful do you think you will be in changing your behaviors using this treatment?

Not at all      Slightly      Moderately      Fairly      Extremely

(3) How strongly would you recommend this treatment to a friend with the same problem behaviors, knowing what you know now?

Not at all      Slightly      Moderately      Fairly      Extremely

Appendix E

NAME : \_\_\_\_\_

I.D. # : \_\_\_\_\_

MONITORING SHEET

Date	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5		
	a.m.							noon	p.m.										a.m.							
MONDAY																										
TUESDAY																										
WEDNESDAY																										
THURSDAY																										
FRIDAY																										
SAURDAY																										
SUNDAY																										

Abbreviations

- B - Binge
- L - Laxatives
- V - Vomit
- D - Diuretics
- E - Exercise

## Appendix F

## Imagery Questionnaire

1. On a scale from 1 to 5, rate how clearly you imagined the scene  
(1 = not able to imagine it at all, 5 = able to imagine it very  
clearly).

Not at all   1       2       3       4       5    Very clearly

2. On a scale from 1 to 5, rate how much of the situation you were  
able to imagine (1 = almost none of it, 5 = all of it).

Almost none   1       2       3       4       5    All of it

In the spaces provided, jot down two or three key words or phrases to  
help you remember your imagined response.

3. What you did: \_\_\_\_\_  
\_\_\_\_\_

4. What you said to yourself: \_\_\_\_\_  
\_\_\_\_\_

5. What you said to others: \_\_\_\_\_  
\_\_\_\_\_

6. What other people in the scene (if present) said to you: \_\_\_\_\_  
\_\_\_\_\_



## Appendix G

FORM 2

## USE OF HUMAN SUBJECTS

INFORMED CONSENT

NAME OF SUBJECT: \_\_\_\_\_

1. I hereby give consent to Betty K. Armstrong to perform or supervise the following investigational procedure or treatment:

Group treatment based on the development of an increased understanding of the environmental events affecting the likelihood of the occurrence of bulimic behaviors.

2. I have heard a clear explanation and understand the nature and purpose of the procedure or treatment; possible appropriate alternative procedures that would be advantageous to me; and the attendant discomforts or risks involved and the possibility of complications which might arise. I have heard a clear explanation and understand the benefits to be expected. I understand that the procedure or treatment to be performed is investigational and that I may withdraw my consent for my status. I also understand that anonymity is assured for the data collected in the investigational procedure or treatment. With my understanding of this, having received this information and satisfactory answers to the questions I have asked, I voluntarily consent to the procedure or treatment designated in Paragraph 1 above.

\_\_\_\_\_  
DateSIGNED: \_\_\_\_\_  
WitnessSIGNED: \_\_\_\_\_  
Subject

or

SIGNED: \_\_\_\_\_  
WitnessSIGNED: \_\_\_\_\_  
Person Responsible\_\_\_\_\_  
Relationship

Instructions to persons authorized to sign:

If the subject is not competent, the person responsible shall be the legal appointed guardian or legally authorized representative.

If the subject is a minor under 18 years of age, the person responsible is the mother or father or legally appointed guardian.

If the subject is unable to write his name, the following is legally acceptable: John H. (His X Mark) Doe and two (2) witnesses.

## Appendix H

## Imagery Scenes for Alternative Stress Response Group

1. I want you to imagine yourself alone in your room or apartment-- wherever you're living now. You think to yourself that you seem to be alone a lot of the time. You begin to feel really lonely and isolated. You start thinking that hardly anyone comes to see you because you're really not worth their time. Those who do come by probably do just because they feel obligated to, not because they want to. You start feeling kind of hopeless and begin to wonder if you'll be alone all your life. You notice how quiet the room is and turn on the TV just to have the sound of other people's voices in the room with you. You've really worked yourself into a down mood by this time. You find yourself walking into the kitchen and standing in front of the refrigerator or food cabinets. Now see yourself becoming aware of the situation. Imagine how you would actively cope with your feelings and actions at such a time.
2. You're feeling a lot of pressure from various demands being made of you--from school or work, from friends or family, or even from your own expectations. It seems like every way you turn, someone or something is pressuring you. There never seems to be enough time to get everything done the way it should be done. You feel tense and frustrated at not being more in control of your life . . . at not being where you want to be or who you want to be. You wonder if your life will ever be more of what you want for yourself, if you will ever attain

your goals. And now, to top off this mood, you've just had a call from your mother, telling you that your least favorite relative is going to be visiting this weekend and you must come home for a visit. You start to panic, thinking of the unfinished project that's due on Monday. Now see yourself becoming aware of your reaction to the situation. Imagine yourself actively coping with the stress.

3. I want you to imagine yourself at home alone, incredibly bored. You can't think of anything that you want to do, but you feel really restless, unsettled. You know you have some work that needs to be done, but you can't bring yourself to even think about it. You pick up a book you've been reading and find yourself re-reading the same page because you can't concentrate. You put down the book and turn on the TV. You're not really involved with the program that's on, but it's better than nothing. Some of the commercials catch your eye, and you think to yourself "Maybe I'll just have a little snack; I haven't binged in over a week--I can handle it." Now see yourself becoming aware of the situation. Imagine yourself actively coping with the urges to eat.
4. I want you to imagine yourself feeling very angry and rebellious. Other people always seem to be telling you what you need to do or how you must act. You know that they care about you and are only thinking of your happiness, but you've just about had it. Even this group--it seems people are always trying to make you give up the things that make you feel good, even if the pleasure

doesn't last very long. "Why should I give up bingeing?" you say to yourself. You begin to feel very defiant and think about having another binge. "It's my life and I'll do what I want to do with my body," you say. You begin to talk yourself into having a binge even though--logically--you know it's going to hurt you and not anyone else. You walk out the door, intending to drive to the closest store. Now see yourself becoming aware of the situation. Imagine yourself actively coping with your urges to binge.

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