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The Efficacy of a Self-Administered Cognitive Behavioral Treatment Program for Body Image Dissatisfaction in Women with Subclinical Bulimia Nervosa

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THE EFFICACY OF A SELF-ADMINISTERED COGNITIVE BEHAVIORAL TREATMENT PROGRAM FOR BODY IMAGE DISSATISFACTION IN WOMEN WITH SUBCLINICAL BULIMIA NERVOSA

by

Ellen N. Emerson

A dissertation submitted in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY in

Psychology

UTAH STATE UNIVERSITY
Logan, Utah

1995
ABSTRACT

The Efficacy of a Self-Administered Cognitive Behavioral Treatment Program for Body Image Dissatisfaction in Women with Subclinical Bulimia Nervosa

by

Ellen N. Emerson, Doctor of Philosophy
Utah State University, 1995

Major Professor: Dr. David M. Stein
Department: Psychology

Subjects for this study were 40 women (N = 40) with subclinical bulimia nervosa who were randomly assigned to either a Cognitive Behavioral Treatment group (CBT) or to a waiting list control group. Treatment was provided for 8 weeks in an individual, self-administered format, using an audio-taped treatment package for Body Image Dissatisfaction (BID). Cognitive behavioral treatment focused on changing negative thoughts and feelings about one's body. No specific treatment focused on changing eating symptomatology or concomitant symptoms, although these were assessed. The waiting list control condition received assessment, followed by 8 weeks of no treatment. Treatment outcome measures were three self-report scales that assessed BID and two measures that assessed eating symptomatology and concomitant
symptoms. At posttest, treated subjects showed improvement on two of three measures of BID, with a trend towards improvement on the third measure, when compared to waiting list control subjects. Treated subjects also showed a trend towards improved eating symptomatology and concomitant symptoms such as depression and anxiety, relative to waiting list control subjects. The results indicated that CBT is effective for decreasing BID in women with subclinical bulimia nervosa when administered in a self-directed manner.
This work is dedicated to my parents,
David and Shirley Emerson.
ACKNOWLEDGMENTS

I would like to express my appreciation to my chairman, Dr. David Stein, for his support throughout my doctoral education. From the beginning, he has been an outstanding guide, and has provided excellent editorial advice and technical support.

I would also like to thank Drs. Mary Doty and Susan Crowley for their presence in my life as mentors, role models, colleagues, and friends. Specifically, I would like to express my gratitude to Dr. Doty for believing in me, encouraging me to believe in my own way, and for her keen interest in this project. I would like to thank Dr. Crowley for teaching me that I could do research, and for encouraging solid scholarship. Finally, I would like to express my appreciation to Drs. Elwin Nielsen and Richard Gordin for serving on my committee and providing excellent feedback and support.

A special thanks goes to the staff at the Utah State University Counseling Center: Dr. Mary Doty, Dr. David Bush, Dr. Gwena Couillard, Dr. Mark Nafziger, Dr. Jan Neece, and Camille Larsen for supporting me and this project. I could not have done this without them. Thanks also to my research assistants: Deann Warner, Haley Houtchens-Lindhart, and Stephanie Sorensen for their hard work, enthusiasm, and sustained interest.
Finally, all of this would not have been possible without the support of my family and friends. I am grateful for their presence in my life. I would like to express my appreciation to my parents, Drs. David and Shirley Emerson, for believing in me, for their emotional and financial support, and for being such good role models. I would also like to thank Eric, Cheryl, Richard, and Betsy Emerson for their love and encouragement. Additionally, I would like to thank Tara for her patience and unconditional love.

Ellen N. Emerson
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CHAPTER I
INTRODUCTION

Body image disturbance is considered a central and maintaining feature of both anorexia nervosa and bulimia nervosa (Cash & Brown, 1987; Garner & Garfinkel, 1981). Body image disturbance in the eating disorders is thought to be comprised of two components—perceptual distortion and cognitive/affective dissatisfaction (Garfinkel et al., 1992). The perceptual (psychophysical) component of body image disturbance consists of an inability to accurately estimate one's own size, and is usually referred to as body image distortion. The cognitive/affective component of body image disturbance consists of negative thoughts and feelings about one's weight and shape, and is usually referred to as body image dissatisfaction.

Cognitive behavioral treatment methods, implemented in either a group or individual format, are the most commonly used methods for therapeutic gains in bulimia nervosa (Garner & Garfinkel, 1985; Garner, Garfinkel, & Bemis, 1982). Literature reviews of the controlled studies of cognitive behavioral treatment for bulimia have found that these methods are effective for reducing the frequency of binge eating and vomiting (Anderson, 1987; Fettes & Peters, 1992; Garner, Fairburn, & Davis, 1987; Hartmann, Herzog, & Drinkman, 1992; Mitchell, 1991). However, follow-up studies in this area suggest that body image dissatisfaction seems
to linger on long after the disordered eating has stopped, for most patients (Fairburn, Peveler, Jones, Hope, & Doll, 1993; Garner, Shafer, & Rosen, 1992). Because cognitive behavioral treatment methods work for many of the bulimic symptoms, it makes sense to use them to directly address body image dissatisfaction as well.

Several clinicians have described their approaches to utilizing cognitive behavioral and other techniques to treat body image dissatisfaction in women (Brouwers, 1990; Hutchinson, 1982; Kaslow & Eicher, 1988; Katzman, Weiss, & Wolchik, 1986; Vandereycken, Depreitere, & Probst, 1987; Wooley & Wooley, 1985). Although these descriptive reports did not yield quantitative data, the authors nonetheless claimed good results. Empirical studies have also attempted to use cognitive behavioral treatment to focus directly on changing body image dissatisfaction in bulimia nervosa and in nonclinical samples (Butters & Cash, 1987; Dworkin & Kerr, 1987; Rosen, Saltzberg, & Srebnik, 1989). These empirical studies suggest that cognitive behavioral treatment methods are at least somewhat effective for improving or reducing body image dissatisfaction in clinical and nonclinical samples of women. However, none of these studies examined the effect of reduced body image dissatisfaction on eating-disorder symptoms, such as binging and purging. Thus, although the women in the above studies
reported that they felt better about their bodies, none of the studies reported whether this improvement was associated with a reduction in disordered eating or other concomitant symptoms such as anxiety and depression.

In addition, the literature in this area is fraught with inconsistencies in terms of what exactly constitutes cognitive behavioral treatment. For example, one study reported using assertiveness training and relaxation in addition to cognitive interventions (Huon & Brown, 1985), while another study reported using education, self-esteem exercises, and guided imagery (Wooley & Roll, 1991). Both studies report using cognitive behavioral therapy, but the type and length of treatment as well as the adherence to a specified protocol differed. One way for researchers to improve consistency across studies is to use a standardized treatment protocol when attempting to assess the efficacy of cognitive behavioral treatment methods for improving body image dissatisfaction. When the treatment is standardized, adherence to the methods is more certain, although differing levels of therapist skill can impact whether or not the treatment is successful.

One study in this area attempted to use a standardized audio tape-driven treatment in order to assess the efficacy of cognitive behavioral treatment methods for improving body image (Butters & Cash, 1987). This study used audio tapes
with therapist assistance and found the methods to be somewhat effective for reducing body image dissatisfaction using a sample of college women. Since that time, the audio tapes have been improved and published along with a workbook to use with the tapes (Cash, 1991). However, the efficacy of this treatment package has not been tested for women with bulimia nervosa and the associated changes in disordered eating have not been reported. In addition, the new version of the treatment protocol can be used in a self-directed or self-administered fashion. The efficacy of its use in this manner has also not been evaluated.

Research on the efficacy of self-administered treatments has been relatively scant and at times contradictory. However, a recent meta-analysis (Gould & Clum, 1993) suggests that self-administered treatment, in general, is more effective than no treatment, and at least as effective as therapist guided treatment for some conditions (e.g., fear reduction, headache, and social skills training). In addition, many clients seeking outpatient treatment may be placed on a waiting list before they can receive services. Some of these clients may have presenting complaints that would be treatable in a structured self-administered program, such as the one published by Cash (1991) for the treatment of body image dissatisfaction. Use of such standardized self-administered
treatment packages may make treatment more accessible and less expensive for some clients who might otherwise have to wait for help. The purpose of the current study is to test the efficacy of the Cash (1991) treatment package for improving body image when it is used in a self-administered or self-directed manner by women with bulimic symptoms.
CHAPTER II
REVIEW OF THE LITERATURE

The following literature review begins with a discussion of the constructs of body image disturbance, body image distortion, and body image dissatisfaction in the eating disorders. A brief review of the measurement techniques for body image dissatisfaction follows. The literature on the outcome of cognitive behavioral treatment of bulimia nervosa is also reviewed, followed by a comprehensive review of the cognitive behavioral treatment of body image dissatisfaction. The effectiveness of self-administered treatment programs is also reviewed. Finally, the difficulties that exist in the treatment of body image dissatisfaction are discussed.

Body Image Disturbances in the Eating Disorders

Ever since physicians began describing patients with anorexia nervosa in the literature, body image disturbances have been identified as fundamental to eating disorders (Bruch, 1962). In the 1987 Diagnostic and Statistical Manual of Mental Disorders, Third Edition (Revised) (DSM III-R) (APA, 1987), body image disturbance is cited as an essential criterion. For anorexia nervosa, this criterion is worded as a "disturbance in the way in which one's body weight, size, or shape is experienced" (p.67). In a similar
vein, the diagnostic criterion for bulimia nervosa is "persistent overconcern with body shape and weight" (p.69). Despite the fact that body image disturbance is viewed as an essential component of the eating disorders, there is uncertainty regarding the operational definitions and measures of the construct. Researchers are still attempting to determine the exact qualitative nature of body image disturbance as it is experienced by women with eating disorders.

At this time, body image disturbance is conceptualized in the literature as either body image distortion or body image dissatisfaction, or both. For the purposes of this study, body image distortion is defined as a perceptual/psychophysical component of body image disturbance that consists of an inability to accurately estimate one's own size. Body image dissatisfaction is the cognitive/affective component of body image disturbance, and consists of negative thoughts and feelings about one's weight and shape. The literature on both body image distortion and dissatisfaction will be briefly reviewed below.

Body Image Distortion

Bruch (1962) was the first contemporary psychiatrist to postulate that distortion of body image was a cardinal feature of anorexia nervosa. She discussed patients who
were severely emaciated, yet steadfastly denied needing to gain weight, and who denied concern about their physical health. Researchers initially conceptualized body image distortion as a perceptual (psychophysical) construct that reflected an inability to accurately estimate one's size (Slade & Russell, 1973). Since the early 1970s, research on the utility and validity of various definitions of body image distortion has grown dramatically. Several methods of measurement have been proposed. For example, size estimation techniques have included movable calipers and image marking methods. Distorting image techniques include having the experimenter or subject distort photographs, mirrors, and video images (Slade, 1985). Such measures focus on the psychophysical component of body image disturbance known as body image distortion.

Several reviews of body image distortion in anorexia nervosa have been conducted (Cash & Brown, 1987; Garner, 1981; Hsu, 1982; Hsu & Sobkiewicz, 1991; McCrea, Summerfield, & Rosen, 1982). These literature reviews suggest that no matter what measurement technique is used, women with anorexia nervosa display body image distortion, particularly prior to restoration to normal weight. Furthermore, body image distortion appears to be associated with poorer treatment outcome. However, it must be emphasized that many women without anorexia nervosa also
distort their body image, albeit to a lesser degree. Thus, body image distortion appears to be a necessary-but-not-sufficient condition for meeting the DSM-III-R diagnostic criteria of body image disturbance. Furthermore, it is also an issue that is not exclusive to eating disorders.

More recent studies and reviews have attempted to summarize the empirical evidence regarding the extent of body image distortion in bulimia nervosa patients (Birtchnell, Lacey, & Harte, 1985; Cash & Brown, 1987; Freeman, Thomas, Solyom, & Miles, 1983). Again, no matter what method of measurement is used, reviews of the literature suggest that eating-disordered groups perceptually distort their bodies more than comparison groups (Cash & Brown, 1987). However, on average, bulimic women demonstrate a degree of body image distortion that is not significantly greater than that of normal women. Thus, while it is a criterion that is widely accepted in American psychology, body image distortion may have questionable validity as a criterion for bulimia nervosa.

Body Image Dissatisfaction

. Once it was recognized that normal women also display distorted body images, researchers began to suggest that the body image distortion research should be abandoned in favor of efforts that focus on fear of fatness and body disparagement in order to understand the eating disorders
(Hsu & Sobkiewicz, 1991). Others began to postulate that other components (besides the perceptual one) might make up the construct of body image disturbance (Cash & Brown, 1987). As noted previously, the cognitive/affective component is commonly referred to as body image dissatisfaction. It entails derogatory thoughts and feelings about one's body weight and shape. Considerable importance has been attached to this construct in the eating disorders, as evidenced by the wording of the DSM-III-R diagnostic criteria for bulimia nervosa (noted above), and the proliferation of articles attempting to measure the presence of body image dissatisfaction in the eating disorders. In order to understand the debate, a brief chronological review of the arguments for and against including body image dissatisfaction as a criterion for bulimia nervosa is presented below.

Russell (1979) first began discussing a morbid fear of fatness as part of the original criteria for bulimia, and researchers have attempted to quantify and measure the construct of disturbed attitudes about shape and weight ever since. The DSM III (APA, 1980) did not specify a fear of fat in the diagnostic criteria for bulimia, although some researchers (Fairburn & Garner, 1986; Fairburn, 1984) still suggested that disturbed attitudes towards shape and weight were essential for the diagnosis of bulimia. Thus, the DSM
III-R (APA, 1987) criterion E for bulimia nervosa was added to focus on attitudes about shape and weight. This reflected the theory that disturbed attitudes towards shape and weight lead to dieting, which leads to binge eating followed by purging, which leads to the cyclical characteristic behaviors of bulimia nervosa—starvation, rigid dieting, binge eating, and purging. Thus, this theoretical viewpoint suggests that body image dissatisfaction and overconcern about weight and shape are essential to the development and maintenance of bulimia nervosa. However, striving for clarification in the diagnostic criteria for bulimia nervosa has continued with questions about whether body image dissatisfaction and/or overconcern about shape and weight contribute equally to the disorder.

Recently, researchers have attempted to clarify the pathology of weight and shape concerns and body image dissatisfaction in order to contribute to the revisions to the diagnostic criteria for bulimia nervosa in DSM IV (APA 1994). The DSM IV diagnostic criteria reads, "Self-evaluation is unduly influenced by body shape and weight" (APA, 1994, p. 550). However, the debate continues about whether or not body image dissatisfaction and concerns about shape and weight are the same thing. Cooper and Fairburn (1993) have argued that body image dissatisfaction and
weight and shape concerns are two separate diagnostic features in bulimia nervosa because change in body shape dissatisfaction was closely associated with change in mood while change in overvalued ideals was closely associated with change in self-esteem. Furthermore, Cooper and Fairburn (1993) have suggested that dissatisfaction with body shape is not always present for patients with bulimia nervosa. Thus, the authors concluded that the two constructs are separate features in the diagnosis of bulimia nervosa.

Garfinkel (1992) agreed that disturbed attitudes toward shape and weight are essential for the diagnosis of bulimia nervosa, but suggests that assessment instruments used to date do not adequately measure this construct. Hadigan and Walsh (1991) suggested that while bulimic women score high on measures of overconcern about shape and weight, women without bulimia also score high. They argued that weight and shape concerns are not a distinguishing feature of bulimia nervosa, which is the opposite argument from that mentioned above. Garfinkel et al. (1992) attempted to clarify the issue by arguing that both shape and weight concerns and body image dissatisfaction should be reflected in the diagnostic criteria for bulimia nervosa. These authors suggested that body image dissatisfaction and weight and shape concerns overlap significantly and posit that body
image dissatisfaction is a more affectively laden concept while weight and shape concerns are attitudinal dimensions. Thus, the debate on whether body image dissatisfaction, and shape and weight concerns are different constructs, or whether both should be included in the diagnostic criteria for bulimia nervosa has not been resolved.

In any case, researchers seem to agree that the attitudinal and affective component of body image disturbance is the core pathology that leads to behaviors to control body weight that are associated with bulimia nervosa (Fairburn & Garner, 1988). Researchers have largely abandoned the perceptual concept of body image distortion as a maintaining factor influence in bulimia nervosa. Hence, further research needs to focus on the attitudinal and affective aspect of body image dissatisfaction rather than body image distortion (Hsu & Sobkiewicz, 1991). The measurement literature reviewed below begins to illustrate some of the difficulty in assessing the degree of body image dissatisfaction that is present in women with eating disorders.

Measurement of body image dissatisfaction. In a review of the literature on women’s body attitudes, Ben-Tovim and Walker (1991) reported that four major measuring strategies have been used for body image dissatisfaction—self-report questionnaires, projective tests, silhouette choices, and
interview assessments. The most frequently used self-report measure is The Body Cathexis Scale (Secord & Jourard, 1953). It measures the extent of a subject’s satisfaction with a wide variety of his or her body parts and functions. A total score is derived by summing the values of the items. Another widely used scale is the Body Dissatisfaction Subscale of the Eating Disorders Inventory (Garner, Olmsted, & Polivy, 1983), which queries whether the subject feels parts of her body are too large, just right, or too small. Reviews of the studies that have relied on self-report questionnaires indicate that body satisfaction and self-esteem are strongly correlated. Also, it is noteworthy that most women are dissatisfied with their bodies, particularly their lower parts such as hips, stomach, and thighs (Ben-Tovim & Walker, 1991).

Projective techniques, silhouettes, and interviews have not been as extensively used to measure body dissatisfaction. However, as with prominent paper and pencil questionnaires, it appears that overweight, normal weight, underweight, and eating-disordered women avow dissatisfaction with their bodies to a significant degree (Cash & Green, 1986; Wooley & Roll, 1991). Furthermore, regardless of whether the body image dissatisfaction measures rely on verbal or written self-report or other techniques, body image (perceptual) distortion has not been
shown to be significantly correlated with body image dissatisfaction (Cash & Green, 1986; Mable, Balance, & Galgan, 1986). This finding is consistent with the notion that body image dissatisfaction may be a separate component of body image disturbance. Therefore, researches have recently placed more emphasis on the role of body image dissatisfaction than on the role of body image distortion in the etiology and maintenance of eating disorders.

Outcome research. Several researchers have begun to examine the role of body image dissatisfaction in the eventual outcome of bulimia nervosa. For example, Freeman, Beach, Davis, and Solyom (1985) reported that body image dissatisfaction at the conclusion of treatment was by far the most potent predictor of relapse in their sample of bulimic patients. Fairburn et al. (1993) found that attitudes toward shape and weight, and self-esteem were the only two variables significantly associated with outcome in their study. These authors also reported that the residual level of attitudinal disturbance predicted subsequent outcome. The reasons why attitudinal disturbance are predictive of outcome are not entirely clear. However, Freeman et al. (1985) posited that patients who remain dissatisfied with their body shape resume binging and purging in an attempt to reach their ideal body shape. Furthermore, these authors have suggested that abstinence
from binging and purging is only a partial cure and that
dissatisfaction with body image needs to be addressed, or
relapse of bulimic symptoms is likely to occur.

Despite outcome studies that suggest that level of body
image dissatisfaction is predictive of outcome, and despite
the fact that body image dissatisfaction is theorized to be
important in the maintenance of bulimia nervosa, body image
dissatisfaction is almost never directly focused on in
treatment. In order to understand this apparent oversight
and to place it in context, the literature on the treatment
of bulimia nervosa will be briefly reviewed below.

Reviews of the Literature on
Treatment of Bulimia Nervosa

Leaders in the eating-disorders field highly recommend
the cognitive behavioral approach for treating the global
aspects of bulimia nervosa (Garner et al., 1982; Wooley &
Wooley, 1985). Cognitive behavioral treatment typically
involves using a combination of different interventions,
including self-monitoring, changing distorted thought
patterns, relaxation, a variety of homework exercises, goal
setting, and expression of feelings. Several excellent
reviews have been published recently that reflect the
dominance of cognitive behavioral treatment for bulimia
nervosa and synthesize what we know about the effectiveness
of different treatments for bulimia nervosa (Fettes &
Peters, 1992; Garner et al., 1987; Hartmann et al., 1992; Mitchell, 1991). Two of the reviews reported overall percentages of improvement in the controlled studies of treatment (Garner et al., 1987; Mitchell, 1991), and two used a meta-analysis format to make comparisons across studies (Fettes & Peters, 1992; Hartman et al., 1992). Two explored the effectiveness of any kind of psychotherapy for bulimia nervosa (Hartman et al., 1992; Mitchell, 1991), while the other two specifically explored the effectiveness of group psychotherapy (Fettes & Peters, 1992) and cognitive behavioral treatment (Garner et al., 1987). They will be reviewed briefly below.

Mitchell (1991) examined the psychotherapy studies that included some form of control condition, including a waiting list control, alternative treatment, or a modification of the primary treatment. Eight of the studies he reviewed used group therapy, two used individual therapy, and four used both. All studies included in his review used some sort of self-monitoring of eating behavior and all employed some form of cognitive restructuring in the treatment condition. This led Mitchell to comment that although the review examined different forms of psychotherapy for bulimia nervosa, cognitive behavioral methods dominate the literature.
The outcome measures were the percentage of reduction in binge eating (or vomiting) from pretreatment to posttreatment and the percentage of subjects free from bulimic symptoms during the last week of treatment. Using these measures, Mitchell (1991) reported that the reduction in bulimic symptoms ranged from 51% to 95% and that between 0% and 80% of subjects were free of bulimic symptoms during the last week of treatment. There was no clear difference in effectiveness between individual, group, or combined therapy. In addition, therapy that did not specifically address eating behavior was also somewhat effective, which indicates that a specific cognitive behavioral approach for bulimia nervosa is not necessary. One problem noted by Mitchell (1991) is that the current status of the literature suggests that treatment is effective for reducing binge eating and purging, but not at eliminating the symptoms. In order to improve treatment and understand outcome better, the author suggested that other measures of outcome, such as attitudinal measures, should be included in treatment studies.

Garner et al. (1987) reviewed 19 cognitive behavioral treatment studies to assess the overall effectiveness of this modality for bulimia nervosa. Again, the outcome measure used was the percentage of reduction in binge eating (or vomiting) from pretreatment to posttreatment and the
percentage of subjects free from bulimic symptoms during the last week of treatment. The median percentage of reduction in binging across studies was 79%, with a range of 50.7% to 96.5%, while 75% of the studies showed at least a 60% reduction in vomiting with treatment. The percentage of subjects abstinent from binging at follow-up ranged from 9% to 83.3%, with a median of 28%. The percentage of subjects abstinent from vomiting and follow-up ranged from 11% to 100%, with a median of 33.2%. Again, these researchers have suggested that the success rate for reducing binging and vomiting is high, but not nearly so high for eliminating these symptoms. In conclusion, the authors have suggested that cognitive behavioral treatment methods clearly dominate the literature and that they are somewhat effective for reducing binging and vomiting.

Some problems with the literature were mentioned by Garner et al. (1987) as well. The authors stated that although their review focused on cognitive behavioral treatment studies, only half of the studies appeared to use primarily cognitive restructuring aimed at changing distorted attitudes toward weight, shape, and food. Thus it is unclear whether the cognitive restructuring aspect of the intervention played a key role in the intervention. Their review also noted that across studies, treatment interventions employed many different aspects of cognitive
behavioral treatment in differing amounts. The amount of therapist experience in the studies differed as well. Hence, the authors suggested that future researchers need to standardize the treatment interventions through the use of manuals.

Hartmann et al. (1992) used a meta-analysis format to examine the effectiveness of different types of psychotherapy for the treatment of bulimia nervosa. The authors examined 18 studies that used at least five patients, and reported that cognitive behavioral treatment methods dominated the literature. The outcome measures were changes from pretreatment to posttreatment in the amount of binging and purging reported by the subjects. The average outcome effect size across all studies was $ES = 1.04$. There was no one setting or therapeutic approach that was most effective, and 36% of the variance in outcome was explained by the number of treatment sessions in combination with a relationship orientation. Thus, again, treatment for bulimia nervosa appears to be at least somewhat effective when the outcome measure is based on changes in binge eating and purging. The authors lamented that follow-up data were largely not reported in the literature, and that the descriptions of the treatment interventions varied widely. Thus, they suggested that future researchers should describe treatment interventions in more depth, report all
statistical information, and examine the effectiveness of the treatment after a follow-up period.

Fettes and Peters (1992) used meta-analytic methods to explore the effectiveness of group treatment for bulimia nervosa. The outcome measures used in their review were effect sizes based on pretreatment to posttreatment changes in bulimic symptoms. Using 40 studies (with and without control groups), they found that the weighted average effect size for group treatment was .75 at posttreatment, which suggests that group treatment alone is effective for a subset of bulimics. The average effect size was .89 at 3 months follow-up and 1.17 at 1 year follow-up, which suggests that treatment effectiveness is maintained and improved during follow-up. These authors reported that approximately one fourth of the subjects were abstinent of bulimic symptoms at follow-up, a notable percentage (15%) dropped out of treatment, and a similar number did not change or got worse. Fettes and Peters (1992) suggested that although the average effect size for group treatment was large, a relatively small number of subjects were completely free of symptoms at follow-up. Thus, again, treatment appears to be effective in reducing the frequency of binge eating and purging, but not entirely effective for elimination of these symptoms.
To summarize the reviews above, it appears that psychotherapy for bulimia nervosa is somewhat effective for reducing the frequency of binging and vomiting. Cognitive behavioral treatment methods have been implemented in a group, individual, and combined format, and appear to be effective in all formats. Therapy that does not directly address eating behavior is also effective. Psychotherapy of longer duration appears to be more effective, but short-term group therapy is also effective for a subset of bulimic women. However, a significant percentage of patients was not completely abstinent from binging and purging after treatment. Attitudinal changes may need to be made before this can occur (Garner et al., 1987), but attitudinal data are sparse in the reviewed reports. Finally, a wide variety of techniques has been employed under the umbrella of cognitive behavioral treatment. Further research needs to more explicitly describe the treatment interventions used and standardize treatments through the use of treatment manuals.

Given that the research reviews discussed above have found that cognitive behavioral treatment is effective for reducing binging and purging in women with bulimia nervosa, it makes sense to examine the effectiveness of cognitive behavioral therapy for reducing the attitudinal and/or affective symptoms for the disorder as well. Cognitive
behavioral treatment methods may work to change fundamental attitudes about shape and weight that are thought to maintain the disorder. The research using cognitive behavioral treatment for reducing body image dissatisfaction will be reviewed below. The review will begin with descriptive studies that have employed cognitive behavioral treatment methods for women with bulimia nervosa that have also discussed body image dissatisfaction, followed by empirical studies that used cognitive behavioral treatment methods specifically to treat body image dissatisfaction in both bulimic and normal women.

Cognitive Behavioral Treatment for Body Image Dissatisfaction

Most studies that use cognitive behavioral treatment for bulimia nervosa have not examined the efficacy of specifically and directly intervening in the body image dissatisfaction, which is considered to be fundamental to bulimia nervosa. In fact, many researchers and clinicians assume that body image dissatisfaction will change once underlying psychological issues have been resolved with the use of cognitive behavioral treatment. Some, however, argue that while a strategy must be developed to address body image disturbance, direct approaches may be counter-therapeutic initially (Garner et al., 1982). Garner et al. (1982) suggested that therapists should try to alter
patients' misperceptions of their bodies by altering how they interpret their experiences, rather than by addressing the body image disturbance directly. In spite of the arguments against directly addressing body image dissatisfaction initially in treatment, a number of clinicians working with eating-disordered women have begun to use cognitive behavioral techniques for this purpose (Katzman et al., 1986; Vandereycken et al., 1987; Wooley & Wooley, 1985).

Descriptive reports. Six descriptive reports that focused on treatment of body image dissatisfaction were located in the literature. This may indicate that practicing clinicians are increasingly adopting the theoretical rationale associated with cognitive behavioral techniques and are using cognitive strategies in an attempt to change body image dissatisfaction in eating-disordered women (Brouwers, 1990; Hutchinson, 1982; Kaslow & Eicher, 1988; Katzman et al., 1986; Vandereycken et al., 1987; Wooley & Wooley, 1985). Although all six studies report changes in self-esteem and body image dissatisfaction, none of the studies also reported changes in binging and purging from pretreatment to posttreatment. In addition, a significant problem arises when the reader seeks to consolidate the advice and guidance offered in these reports. All of the treatments described used different
components of cognitive behavioral therapy in differing amounts. Thus, it remains unclear what aspect of the treatment accounts for the improvement in body image dissatisfaction in these studies.

These six reports were coded to examine the components of cognitive behavioral treatment that were most often cited as being helpful in changing body image dissatisfaction. The definitions used to code for each component of therapy are listed below. Indeed, a closer inspection of these studies reveals some common aspects of treatment (see Table 1).

**Definitions for components of therapy.**

*Educational*—information on the development of body image and body image dissatisfaction.

*Sociocultural*—an examination of societal messages given to women about being thin and attractive.

*Cognitive*—specifically teaching subjects to challenge negative self-statements and derogatory thoughts.

*Self-esteem*—general interventions aimed at de-emphasizing appearance and attractiveness and improving self-esteem regarding other areas of competence.

*Emotional*—interventions focused on labelling and expressing feelings.
Table 1

Summary of Commonly Described Components of Therapy

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Role-play--using role plays with other group members to act out behaving in new ways, such as having a positive body image.

Assertiveness training--teaching subjects to speak up and directly ask to have needs met.

Family therapy--working with other family members.

Guided imagery--having subjects visually imagine themselves behaving as if they liked their bodies.

Mirroring exercises--having subjects look at themselves in the mirror and directly confront their negative thoughts.

Relaxation--progressive relaxation exercises and overall tension reduction techniques.

Video confrontation--taping subjects and having them watch themselves on tape.

Movement--using dance and movement to become more aware of body functioning and competence.

Art therapy--using art medium for self-expression and exploration of feelings.

As can be seen in Table 1, of the six descriptions of treatment reported, three discussed sociocultural reasons for body image dissatisfaction (1,2,6). Two included an educational component about eating disorders (1,2). Two described using cognitive techniques, such as confronting self-defeating thoughts and changing them to positive
thoughts (1,5,6). Two treatments directly focused on self-esteem (2,4). Three treatments focused on changing emotions, particularly increasing the expression of feelings (1,4,6). Two of the studies described using role play (1,5), while one used assertiveness training (2). Four of the studies included some aspect of addressing family issues, particularly family body image (1,2,3,5). Two studies used guided imagery (3,5), while two others used a mirroring exercise (2,6). Two studies included relaxation (3,4), and one included videotaping (4). Two included movement (4,5), and one included art (5).

Since no empirical data are reported in any of the above mentioned studies, it is impossible to determine exactly what components of cognitive behavioral treatment packages may be effective (if any) for improving body image dissatisfaction. Although these studies were described as cognitive behavioral treatments, some did not include a common strategy—changing self-statements about body image (2,3,4). However, these studies suggest that the authors' procedures altered body image dissatisfaction. Therefore, it may be that the cognitive component of the treatment packages is not the essential ingredient. In addition, the treatments described do not provide any quantitative data about the degree of improvement of body image dissatisfaction or about associated changes in binging and
purging that may have occurred over the course of treatment. In order to determine the efficacy of cognitive behavioral approaches, we must turn to the empirical studies.

**Empirical studies.** Ten empirical studies that used cognitive behavioral treatment methods and addressed body image dissatisfaction were located in the literature and included in this review (Butters & Cash, 1987; Connors, Johnson, & Stuckey, 1984; Dworkin & Kerr, 1987; Huon & Brown, 1985; McNamara, 1989; Ordman & Kirschenbaum, 1985; Rosen, Cado, Silberg, Srebnik, & Wendt, 1990; Rosen et al., 1989; Wolchik, Weiss, & Katzman, 1986; Wooley & Roll, 1991). Five involved bulimic women (BN), four used women screened as high on measures of body image dissatisfaction, and one involved normal weight repeat dieters as subjects for the experimental condition. In order to determine what components of cognitive behavioral treatment were most often used, the empirical studies were coded for the same components of cognitive behavioral treatment that were defined and coded for the descriptive studies listed above, and summarized in Table 2.

As can be seen in Table 2, of the ten empirical studies reviewed, seven discussed sociocultural reasons for body image dissatisfaction (1,2,3,4,5,6,10). Eight included an educational component centering on eating disorders and body image (1,3,4,5,6,9,10). All studies described using
Table 2

Components of Therapy Used in Empirical Studies

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- Educational + + + + + + + + +
- Sociocultural + + + + + + +
- Cognitive + + + + + + + + + + +
- Self-Esteem + + +
- Emotional + + + + + +
- Role Play +
- Assertiveness + + +
- Family +
- Guided Imagery + + +
- Mirror + +
- Relaxation + +
- Video +
- Movement +
- Art +

cognitive techniques such as confronting self-defeating thoughts and changing them to alternative thoughts. Three treatments directly focused on self-esteem (4,5,6). Six treatments focused on exploring emotions, particularly increasing the expression of feelings (1,2,3,4,5,6). All studies included some type of homework in the treatment intervention. Self-monitoring of eating behavior and self-talk was most commonly used as homework.

One study described the use of role play (6) while four used assertiveness training (1,3,4,5). Only one study included some aspect of addressing family issues, particularly family body image (6). Four authors used guided imagery (6,8,9,10), while two others used a mirroring exercise (5,6). Three studies included relaxation (1,3,9). Finally, one study included videotaping, movement therapy, and art therapy (6). All ten studies reported that subjects who participated in treatment improved body image dissatisfaction and self-esteem.

To examine the overall effectiveness of the treatments described in the above studies, average treatment effect sizes were calculated for all of the studies that reported sufficient data for calculation. For the purpose of this analysis, the treatment effect size was calculated by subtracting the mean of the posttreatment control group from the posttreatment experimental group and then dividing by
the standard deviation of the control group at posttreatment, as recommended by Smith and Glass (1977). Two variables were specifically examined: the reported change in eating habits and the change in body image dissatisfaction scores.

For the five studies that used bulimic women as subjects (Connors et al., 1984; Huon & Brown, 1985; Ordman & Kirschenbaum, 1985; Wolchik et al., 1986; Wooley & Roll, 1991), all five reported sufficient data for treatment effect size calculations on the body image dissatisfaction variable. The calculated mean effect size was 1.03 for the two studies that used the Body Dissatisfaction Scale on the Eating Disorders Inventory, and 1.48 for the three studies that used the Body Cathexis Scale. In terms of changing eating patterns, there was a calculated mean effect size of 1.4 for reduction in binging and purging for the two studies that provided data, and an average of 76% reduction in binging and purging for the remaining three studies. Thus, it appears that for those studies using cognitive behavioral treatment for bulimia nervosa, such treatment is effective for reducing binging and purging and for reducing body image dissatisfaction.

Five studies that used normal weight women without eating disorders as subjects (Butters & Cash, 1987; Dworkin & Kerr, 1987; McNamara, 1989; Rosen et al., 1990; Rosen et
al., 1989) and used cognitive behavioral treatment methods to address body image dissatisfaction were also reviewed. Across all studies and all measures, there was an average treatment effect size of .84 for body image dissatisfaction measures. The mean effect size for those studies that used the Body Shape Questionnaire was 1.17. Therefore, it appears that cognitive behavioral treatment is effective for improving body image dissatisfaction.

Unfortunately, because the focus of the above studies was on changing body image dissatisfaction and not on associated changes in eating habits, eating measures were not used in these studies for the most part. Therefore, the link between improved body image dissatisfaction and eating changes was not made. However, one study reported an 87.5% reduction in dieting behaviors in the subjects (McNamara, 1989). Although no quantitative data were reported, another study (Rosen et al., 1990) reported that subjects became less rigid in their thinking, dieted less, skipped fewer meals, and engaged in less binge eating. Thus, although the data are sparse, it appears that changes in body image dissatisfaction are associated with improved eating habits for normal weight women without eating disorders.

Several questions remain about the effectiveness of cognitive behavioral treatment for body image dissatisfaction. One question is whether clients in
treatment improve on measures of body image dissatisfaction because of the assessment provided. To explore this question, we must turn to studies that used a control group. The two studies that used a wait-list control group for the comparison group (Huon & Brown, 1985; Wolchik et al., 1986) reported very different treatment effects. One study (1) reported a very large effect size (ES = 3.4) using the Body Cathexis Scale for measurement. The other study (4) reported that both the wait-list control group and the treatment group improved equally on measures of body image dissatisfaction. The authors attributed the positive change in the control group to the assessment session. They speculated that by drawing attention to body image dissatisfaction in the pretest and posttest sessions, body image was improved for the control subjects (see Table 3). The speculation that control subjects may improve just by being in the study suggests that attention may be the important factor in changing body image dissatisfaction.

An additional question explored was whether subjects improved on measures of body image dissatisfaction as a function of attention alone. Three studies (Butters & Cash, 1987; Ordman & Kirschenbaum, 1985; Rosen et al., 1989) compared a treatment condition to a minimal treatment control condition to test the effects of body image
Table 3

<table>
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<tr>
<th>Study</th>
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<th>Body Cathexis ES</th>
<th>Eating Change ES</th>
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<td>3.4</td>
<td>1.8</td>
<td>60%</td>
</tr>
<tr>
<td>4</td>
<td>Group</td>
<td>Not reported</td>
<td>1.1</td>
<td>Both groups improved</td>
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dissatisfaction treatment. The minimal attention groups received lectures on body image, information about dieting and nutrition, and discussion of related issues without specific instructions on changing self-talk or relaxation exercises. The minimal-attention control groups differed somewhat across studies, but they all included some assessment of body image and an educational component. The average effect size for these three studies is 1.32. Thus, it appears that direct intervention in body image dissatisfaction is more effective than attention alone (see Table 4).

Finally, two studies attempted to determine which specific aspects of cognitive behavioral treatment accounted for improved body image dissatisfaction (Dworkin & Kerr, 1987; Rosen et al., 1990). One study (Dworkin & Kerr, 1987) compared cognitive therapy to cognitive behavioral therapy and to reflexive therapy. Cognitive therapy in this study is described as a treatment that attacks irrational
beliefs and self-statements and changes them into more positive ones. Cognitive behavioral therapy combines the cognitive techniques described above with the behavioral techniques of self-reinforcement and a guided fantasy exercise. Reflexive therapy was defined as therapy that encouraged expression of feelings, but provided no specific education or behavioral suggestion. Both cognitive and cognitive behavioral therapy were found to be effective in changing body image dissatisfaction compared to reflexive therapy ($ES = .55$, $SD = .23$). However, the treatment effects for these interventions were not significantly different from one another.

Another study examined whether cognitive behavioral therapy, with or without size perception training, accounted
for changes in body image dissatisfaction (Rosen et al., 1990). In this study, cognitive behavioral treatment included modification of distorted and negative thoughts about physical appearance and exposure to avoided situations that provoked negative body image. Size perception training included exercises to correct size and weight overestimation. The authors found that cognitive behavioral treatment, with and without size perception training, was effective in improving body image dissatisfaction. However, size perception training did not enhance changes in body image dissatisfaction. This lends further support to the notion that body image dissatisfaction is a component that is distinct from the psychophysical or perceptual component of body image disturbance.

In summary, it appears that cognitive behavioral techniques that address body image dissatisfaction for both normal weight and eating disordered women are becoming more common, as indicated by the plethora of descriptive studies in the literature. Little is known about which components of cognitive behavioral treatment are effective for improving body image dissatisfaction, but treatment is clearly effective. However, one question that remains is for whom cognitive behavioral treatment for body image dissatisfaction is most effective. Subject samples in the studies reviewed above vary widely; anorexic, bulimic, and
body dissatisfied women have all been involved in reports published to date. Difficulty arises because the treatment studies that use bulimic women as subjects and target eating behavior do not sufficiently address changes in body image dissatisfaction. Those studies that use women without eating disorders and target body image dissatisfaction do not address eating changes. Hence, issues involved in the theoretical link between body image dissatisfaction and bulimic symptomatology are not clarified. As a result, researchers and clinicians do not work together to advance the knowledge regarding a stepped-care approach for the treatment for bulimia nervosa.

Furthermore, both of these types of studies (those using bulimic women and those using noneating-disordered women) have inconsistent methodologies. The treatments described in the present review vary considerably. No clear consensus exists for what components, if any, should necessarily be included in cognitive behavioral treatment. A variety of techniques has been recommended in the descriptive literature for changing aspects of body image dissatisfaction. They include education, self-talk, discussion of sociocultural issues, guided imagery, mirroring, relaxation, movement therapy, and artwork. All of these methods fall under the nonspecific term cognitive behavioral treatment. The empirical studies have similar
shortcomings. They use traditional cognitive change techniques, including changing self-talk and challenging cognitive distortions. The behavioral aspect of the treatments vary widely, and include relaxation, mirror confrontation, guided imagery, and assertiveness training. In addition, many of the treatments described addressed emotional features of body image dissatisfaction. Several studies mentioned working with subjects to become more expressive of feelings. This component could arguably be labeled affective rather than cognitive. It remains unclear what aspects of the treatment are targeting the cognitive, the behavioral, or the affective components of body image dissatisfaction. It may be less confusing for researchers to simply specify procedures per se when comparing aspects of a treatment program for differential efficacy. This may allow for a clearer understanding of what is being compared in the research.

Furthermore, it remains unclear which components in what doses are necessary for successful intervention on body image dissatisfaction. Because protocols have utilized multiple components of cognitive behavioral treatment, in varying doses, the key ingredients and amounts in the recipe for successful treatment have yet to be identified. One ingredient in successful treatment is the therapists' skill level. However, this varied widely throughout the studies
reviewed above. Some of the studies reviewed used graduate students in clinical psychology as the therapists, while others used practicing doctoral-level clinicians. In addition, some of the studies reported training the therapists to use a standard protocol, whereas others did not specify how they assessed what techniques the therapists were using. This clearly leaves the reader guessing about standardization of treatment across therapists involved in any one study, and baffled about the standardization of what is called "cognitive behavioral" treatment across studies. Standardization issues must be addressed in order to advance knowledge about the key ingredients for successful treatment of body image dissatisfaction.

One way to standardize treatment is to use audio-taped protocols in a self-administered manner. This makes the therapist skill level consistent and administration of doses of various components equal across subjects. In order to determine the feasibility of this approach, the relevant literature on self-administered treatment will be reviewed below.

Self-Administered Treatment

Several researchers have examined the effectiveness of self-administered treatment with a variety of populations (Glasgow & Rosen, 1978; Glasgow & Rosen, 1982; Gould & Clum, 1993; Scogin, Bynum, Stephens, & Calhoon, 1990). Treatment
approaches of this type have been called both self-help (Gould & Clum, 1993) and self-administered treatment (Scogin et al., 1990). For the purpose of this review, the term self-administered treatment will be used. Self-administered treatment refers to any therapeutic intervention presented in a book, manual, audio tape, or videotape format that is implemented by the client independent of a helping professional. Self-administered treatment packages have been used effectively for skill building, habit change, and phobias (Gould & Clum, 1993). Two recent meta-analytic reviews on the effectiveness of self-administered treatments will be examined below.

Gould and Clum (1993) used meta-analytic methods to examine the overall effectiveness of self-administered treatment in 40 studies. All studies had a control group of no treatment, waiting list control, or placebo treatment, and all used random assignment to groups. The authors divided the studies into those that addressed skill training, habit change, and diagnosable problems, and into those that used either self-referred or physician referred subjects. The overall average treatment effect size was .76 at the end of treatment and .53 at follow-up of 6 months. Treatment effect size when compared by type of control group was .99 compared to no treatment, .76 compared to a wait list control, and .49 when compared to a placebo treatment.
There was no significant difference in treatment effectiveness for different modalities, such as books, videotapes, or audio tapes. The addition of assistance by a helping professional increased the effectiveness of the self-administered treatment in the subset of studies that included both modalities. The mean treatment effect size was .93 for therapist-assisted treatment and .64 for exclusively self-administered conditions. Thus, in general, self-administered treatment packages are effective, and may be even more effective with therapist assistance.

Scogin et al. (1990) also examined the question of whether self-administered treatments are as effective as therapist-assisted treatment, and found that the self-administered conditions were more effective than the therapist-administered conditions (mean effect size was .07 greater for the former condition). Although this finding differed from that of Gould and Clum (1993), the remainder of their results were similar. Scogin et al. (1990) also reviewed 40 studies with control conditions, and reported an overall mean effect size of .96 for treatment conditions over no-treatment conditions. The addition of minimal contact improved the efficacy of self-administered treatment when compared to the no treatment control group, making the average effect size 1.19. Thus, again, self-administered treatment appears to be effective, compared to no treatment
when either completely self-administered or when therapist-assisted.

Some cautions in interpreting the results of these reviews need to be kept in mind, however. Scogin et al. (1990) suggested that it is erroneous to assume that the results mean that for all problems, self-administered treatment is better than treatment by a therapist. They reported that the studies reviewed addressed very circumscribed problems, which limits generalizing the results to all therapist-assisted treatment. Gould and Clum (1993) also cautioned against over generalization of the results. A second caution asserted in both studies is that, for the most part, self-administered treatments studied in the literature are not the same ones available for the general public in bookstores. That is, self-help treatment protocols are often developed for a particular research project and then not published, while those that are published are not often critically or empirically analyzed.

In spite of these weaknesses, both Scogin et al. (1990) and Gould and Clum (1993) have suggested that self-administered treatment packages may have important utility. Scogin et al. suggested that many treatment centers have extensive waiting lists for clients seeking outpatient treatment, and that self-administered treatment may be an effective first step in an overall treatment program. This
is also the position espoused by Marks (1991), who suggested that more self-administered treatments could be produced to treat a variety of problems, particularly in the early stages. One problem that Marks (1991) has recommended for further research in the self-administered treatment domain is eating disorders. Garfinkel, Garner, and Goldbloom (1987) also suggested that, as large numbers of patients require treatment for eating disorders, a stepped-care approach from the least intrusive and least costly methods to more extensive and expensive treatment needs to be developed.

**Self-Administered Treatment for Bulimia Nervosa**

One study to date has been published that reports on self-administered treatment for bulimia nervosa (Schmidt, Tiller, & Treasure, 1993). This study assessed 28 patients who were given a cognitive behavioral treatment handbook and reassessed 4-6 weeks later. Twelve of the patients were much improved and 8 were somewhat improved following use of the handbook. Fifteen patients were abstinent from vomiting following self-administered treatment, an increase from only 5 who were abstinent at pretreatment. All subjects improved on measures of eating, but there was only a nonstatistically significant trend towards improvement on body shape concern measures. The authors concluded that use of a self-
administered cognitive behavioral handbook may be an effective first step in treatment.

One other study of note also suggests that self-administered treatment may be effective (Hsu, Santhouse, & Chesler, 1991). These authors reported on a 14-week course of cognitive behavioral treatment for one patient with bulimia nervosa. Although this study used primarily therapist intervention, the self-administered reading was extensive. The authors included a bibliography of readings for the client, done as homework, which included readings on medical information, educational information, cognitive restructuring, assertiveness, and body image. The subject reported reducing binge eating from 5 to 3 times per week, and reducing the incidence of vomiting from 7 to 1 time per week. Clearly, the methodology of this study is such that one cannot tell what the most effective component of the treatment was for the client. However, it suggests that self-administered readings can serve as an adjunct to therapy for clients with bulimia nervosa.

One question that remains following this review of self-administered treatment is, for whom is self-administered treatment effective? The literature suggests that self-administered treatment is effective for several types of problems, and that subjects with bulimia nervosa may respond as well. Furthermore, the authors cited above
have all suggested that self-administered treatment may be an effective first step for clients who would otherwise be placed on waiting lists for traditional therapy. Scogin et al. (1990) reported that the overall mean effect size was greater for analogue studies than the average clinical effect size (.52 vs. .24). This suggests that those clients who have less severe symptoms may be well served by self-administered treatment packages.

For patients with the beginning symptoms of bulimia nervosa, such treatment could be vital. Herzog, Hopkins, and Burns (1993) followed 33 women who presented with subclinical anorexia nervosa or bulimia nervosa who were not admitted to a treatment study for failure to meet all of the research criteria. They found that 46% later went on to meet full criteria for either anorexia or bulimia nervosa 41 months after initially seeking treatment. This suggests that, when left untreated, subclinical bulimia nervosa can progress to bulimia nervosa. Certainly, intervention efforts need to be focused on preventing worsening symptoms.

One symptom that is reported over and over again in the literature is body image dissatisfaction. In fact, 57% of normal weight women report being dissatisfied with their bodies (Butters & Cash, 1987). Since body image dissatisfaction is linked to the development of bulimia nervosa, it makes sense to make efforts to reduce body image
dissatisfaction as a first step in preventing bulimia nervosa. One way to do so is to use a self-administered treatment package, such as the one developed by Cash (1991). This cognitive behavioral treatment package consists of eight audio tapes and a workbook for the client to use in a self-directed manner, with or without therapist assistance. The components of cognitive behavioral treatment that are presented on the tapes were implemented by therapists in a previous study (Butters & Cash, 1987) and found to be effective for reducing body image dissatisfaction in a sample of college women. However, the efficacy of this treatment package for women with bulimia nervosa or subclinical bulimia nervosa has not been assessed to date. Furthermore, the relationship between decreased body image dissatisfaction and disordered eating has not been determined either. Therefore, the purpose of the current study is to test the efficacy of the Cash (1991) treatment package for improving body image when it is used in a self-administered or self-directed manner by women with bulimic symptoms.

The primary questions this study will address are (a) Does Cash's (1991) standardized audio-taped cognitive behavioral treatment package cause a decrease in body image dissatisfaction (or an increase in body image satisfaction) when administered in a self-directed manner; (b) Does
treatment positively alter body image dissatisfaction to a greater degree than no treatment; and (c) Does Cash's (1991) standardized cognitive behavioral treatment package for improving body image have an impact on eating-disorder symptomatology such as binging and purging, and concomitant symptoms such as depression and anxiety?
CHAPTER III
METHOD

Subjects

A total of 40 women (20 in the treatment group and 20 in the waiting list control group) between the ages of 17 and 47 participated in the study. The majority of the subjects (22 or 57.5%) were in the 18- to 22-year-old range. The majority of the subjects were Caucasian (36 or 90%), one was African American, one was Asian, and two were Hispanic. The subjects were fairly evenly distributed across grade levels in school with nine freshmen, six sophomores, nine juniors, nine seniors, two graduate students, and five nonstudents. Twenty-six of the subjects were single, three divorced, and 11 married; while nine had children, 31 reported having no children. The mean age (standard deviation) of the sample was 25.3(8.80) years, with a mean height of 65.15(2.40) inches, and a mean weight of 145.47(32.92) pounds.

The women who participated in the study were recruited from classes, the Student Health Service, and the Counseling Center at Utah State University. Advertisements that described the study were also placed around the USU campus, in the community newspaper, and in the university paper to recruit potential subjects. To enhance recruitment efforts, three different versions of the advertisements were used.
All advertisements invited women who were dissatisfied with their bodies, who were dieting, or had a history of an eating disorder to call for information on treatment to improve body image. The three advertisements used are in Appendix A.

Given that many women experiencing a high degree of body image dissatisfaction do not typically display all of the diagnostic criteria for bulimia nervosa, subclinical cases were also included. To be included in the study, subjects had to meet the following minimal criteria:

1. Self-report of binge eating at least once per week.
2. No more than 10% below normal weight range.
3. Screened to be high for body dissatisfaction using the Body Area Satisfaction Scale (Total Body Parts Mean Score of 3 or lower).
4. Not currently involved in any other psychotherapy.

**Instruments**

The dependent measures for this study were scores on several body image dissatisfaction measures (The Body Area Satisfaction Scale, The Body Esteem Scale, and The Body Shape Questionnaire), scores on a more global measure of problems that are comorbid with eating disorders (The Anorexia Bulimia Inventory), and ratings of the severity of the symptoms that comprise the diagnostic criteria for
anorexia nervosa and bulimia nervosa (The Clinicians Rating Scale). All of the measures used are described below and are found in Appendices B-G.

The Body Area Satisfaction Scale (BASS) (Cash, 1991) is a 10-item measure of body satisfaction that yields nine scores relating to satisfaction with particular groups of body parts as well as a single overall appearance satisfaction rating. The total body parts satisfaction score is obtained by computing the mean of all 5-point ratings from "1" (very dissatisfied) to "5" (very satisfied) (Appendix B). Internal consistency reliability for the BASS has not been reported to date.

The Body-Esteem Scale (Franzoi & Shields, 1984) consists of a list of 35 body parts and bodily functions, rated on a 5-point Likert scale ranging from "1" (having strong negative feelings) to "5" (having strong positive feelings. There are three subscales of body esteem, which differ slightly for males and females. For males, the Physical Attractiveness subscale measures ratings of facial features and overall physical appeal, and the Upper Body Strength subscale measures feelings of physical prowess and energy. The Physical Conditioning subscale refers to overall strength and stamina (both sexes). For females, the subscale of Sexual Attractiveness measures women's feelings about various sexual parts of their bodies as well as their
facial features. The Weight Concern subscale refers to those body parts and functions that women see as related to control of food intake. Scores are obtained by summing the ratings of items in each subscale. Franzoi and Shields (1984) reported internal consistency reliability for females of .78 (sexual attractiveness), .87 (weight concern), and .82 (physical condition) on this measure. Interscale correlations for this measure ranged from .33 to .65, with higher subscale correlations between pairs of factors for males than for females. The highest correlation reported was between female Weight Concern and female Physical Conditioning ($r = .65$). In another study, Franzoi and Herzog (1986) reported that the interscale correlations ranged from .16 to .60, again with the highest correlation between female Weight Concern and female Physical Conditioning subscales. Good convergent and discriminant validity was demonstrated by the male Upper Body Strength and Physical Conditioning subscales and by the female Weight Concern and Physical Conditioning subscales (Appendix C).

The Body Shape Questionnaire (BSQ) (Cooper, Taylor, Cooper, & Fairburn, 1987) is a 34-item measure of concerns about body shape designed to assess the specific circumstances that provoke "feeling fat," and to assess the behavioral and emotional consequences of such feelings. Subjects rate the frequency over the past four weeks with
which they react to specific events using a "1" (Never) to "6" (Always) rating scale. Example items include, "Have you avoided running because your flesh might wobble?" and "Have you been particularly self-conscious about your shape when in the company of other people?" Internal consistency reliability for this scale reported by the authors is in the high range (.93). Furthermore, discriminant validity was evidenced when women who claimed to not be dieting and to have little concern about shape and weight scored significantly lower than women who expressed a high degree of concern about shape and were dieting or had been diagnosed with bulimia nervosa (Appendix D).

The Anorexia-Bulimia Inventory (ABI91) (Stein, 1991) is a 75-item self-report inventory that measures problems comorbid with eating disorders. The ABI includes the following subscales: Binging, Anorexia, Parent Conflict, Anergia, Depressed Mood, Anxiety, Maladaptive Cognitions, Purging, and Exercise. For each of the ABI items, respondents are to mark one of four Likert-type response options for each question from "1" (Never) to "4" (Very Often). ABI subscales have moderate to high internal consistency, ranging from .64 to .94. In addition, test-retest reliability of the ABI indicates that subjects' scores remain quite stable (.63 to .80 over a 4- to 6-week period) (Stein, 1991). The subscales of the ABI show good
concurrent and predictive validity as well. Interscale correlations of the ABI range from .22 to .72 with the highest correlations between the Depression and Anxiety subscales (Appendix E).

The Clinician's Rating Scale (Stein, 1991) is a 12-item rating scale designed to be used by professionals working with clients with eating disorders. The 12 items are verbatim DSM-III-R diagnostic criteria for anorexia nervosa and bulimia nervosa. For example, two of the items are "Refusal to maintain body weight over a minimal normal weight for age and height," and "Recurrent episodes of binge eating." The professional evaluating the severity of DSM-III-R symptoms in a client is asked to rate each symptom on a 1- to 5-scale ("1" = Severity or frequency of symptom is extremely low, or symptom is not present; and "5" = Severity or frequency of symptom is extreme or unusually high for treatment program). Use of the ratings assumes a significant amount of prior experience working with eating disorder clients. When rating severity, clinicians are asked to subjectively compare the current client with all other similar clients they have typically treated or assessed.

In addition, the 12 symptom ratings have been differentially weighted according to the degree of health threat they pose to the client. The items are summed for a
total score. The weighting of the items was established in a previous study (Stein, 1991). Sixteen professionals who regularly published in the area of eating disorders were asked to rate the DSM-III-R symptoms in terms of how threatening the symptom was to clients' physical or mental health. Predictably, weight loss below 15% of normal weight, laxative abuse, self-induced vomiting, and binge eating were rated as the most health threatening aspects of the symptoms. Thus, the diagnostic criteria are weighted to reflect this health threat. A total score, Global Severity, is derived by (a) having clinicians rate each subject, subjectively comparing their severity to typical eating disorder clients they treat; (b) multiplying the clients' rating by the standardized weight (for health threat designated by experts); and (c) summing the scores for all DSM-III-R criteria. The Global Severity score is, thus, a continuous variable that reflects how compromised the individual's health is perceived to be by the interviewer. Similarly, the Bulimic Severity score is a continuous variable that is computed by summing the ratings for the symptoms that are specific to bulimia nervosa, such as binge eating and vomiting. Interrater reliability for the Clinicians Rating Scale scores was .85 (Appendix F).
Screening

Screening of subjects for inclusion in the study was completed by two undergraduate psychology majors who were trained to administer a structured clinical interview for eating disorders. The interview used was based on the Structured Clinical Interview for DSM-III-R published by Spitzer, Williams, Gibbon, and First (1990) to assess the criteria for anorexia nervosa and bulimia nervosa (Appendix G). The interviewers were trained by engaging in mock interviews with the author of this investigation role playing the part of a prospective subject for each interview. Following the interviews, both undergraduate interviewers classified the mock subjects on the severity of their eating disorder using the Clinicians Rating Scale (Stein, 1991) (Appendix F). The two raters' scores were compared, and discrepancies in the ratings were discussed. This procedure was repeated three times until the raters were consistent with each other. Once agreement was reached, the undergraduate interviewers were instructed to use the same methods with the subjects in the study. A master's-level psychologist blind to the interviewer's ratings listened to the video or audio tapes of the clinical interviews and also rated the subjects to ensure that subjects met the inclusion criteria and to assess the reliability of screening procedure.
Procedures

Subjects who answered advertisements were asked to come to the Utah State University Counseling Center where they were told about the study and asked to complete the research consent form (Appendix H). After giving consent to participate, subjects completed the demographic information questionnaire (Appendix I) and all of the self-report measures. The self-report measures were administered in the same order (BASS, BSQ, BES, ABI) for all subjects. Following completion of the self-report instruments, subjects were interviewed by a member of the research team, and these interviews were either audiotaped or videotaped. Following the interview, the interviewer rated the subject using the Clinician’s Rating Scale. Subjects appropriate for inclusion in the study were then randomly assigned to either the treatment condition or a waiting list control condition.

Members of the waiting-list control condition completed the self-report measures and the screening interview, and then began treatment 8 weeks later. Subjects in the control group were informed that there was not a treatment group currently available for them and that they had been placed on a waiting list. They were given a specific date 8 weeks hence when they were asked to return to participate in the research by completing the posttest measures and repeating
the interview, and then offered treatment as desired. Subjects not appropriate for the study were referred for services in the USU Counseling Center.

Treatment Protocol

The treatment condition utilized a treatment package recently published by Cash (1991). This package consists of eight separate audio tapes and a workbook for clients to use in a self-directed manner. The published version of this treatment package was used because it is readily available, is fairly widely disseminated, and has some research validity. A previous version of this treatment package was used with therapist assistance in the Butters and Cash (1987) study reviewed earlier and was shown to be associated with improved body image affect and weakened maladaptive body image cognitions in a sample of college women with a high degree of body image dissatisfaction. The 1991 published version of the treatment package represents an improvement over the previous version in that it contains much more illustrative detail in teaching clients specific strategies for behavioral and cognitive change, and includes a client workbook.

Each step in the treatment package consists of an audiotaped component and exercises in a workbook to complete along with listening to the tape. Each audio tape and workbook section consisted of separate components of
cognitive behavioral therapy. The treatment began with a general educational component about body image dissatisfaction, and was followed by tapes addressing behavioral, cognitive, and affective aspects of body image dissatisfaction including, for example, education, relaxation, systematic desensitization, attacking cognitive distortions, and changing avoidant behavior. The specific schedule of the exercises is outlined in Appendix J.

Subjects in the treatment condition had 8 weeks to complete the self-directed program, that is, listening to one tape and completing the workbook exercises associated with that tape per week. Each subject listened to the tapes in a quiet room at the USU Counseling Center where she could be undisturbed, and where records could be maintained about treatment compliance. Subjects who had questions about the tapes or did not understand the exercises were encouraged to ask questions as they went along. However, no direct therapist assistance was provided in terms of having regularly scheduled contact with a therapist. This procedure was followed to test the efficacy of this treatment package when used in a self-administered and self-directed manner without therapist assistance.
Posttreatment Assessment

At week eight, all subjects in the treatment condition completed the posttest measures and a follow-up interview. The subjects were then rated again on the Clinician’s Rating Scale (Stein, 1991) by the interviewer and by another member of the research team. Subjects who requested further treatment at this point were referred to the USU Counseling Center for follow-up care. This procedure was also followed for subjects in the waiting-list control condition who were asked to come in to the Counseling Center after 8 weeks of waiting and complete the posttest measures and follow-up interview. Subjects in the waiting-list control condition were then offered the treatment intervention. These procedures were repeated with cohorts of subjects in the experimental and control conditions until an adequate sample size was obtained.

A total of 75 women initially volunteered for the study and were screened to determine if they met the inclusion criteria. Six women who volunteered for the study did not meet the inclusion criteria, and were either referred for other treatment or declined other treatment. Two of the potential subjects who met the inclusion criteria were referred to individual therapy due to severe suicidal ideation. Thus, 67 women met the inclusion criteria and agreed to participate in the study.
Of the 67 women who were initially deemed appropriate for the study, 40 completed the study. Seventeen of 37 women who were placed in the treatment group did not complete treatment for various reasons, including a decision to seek additional therapy, moving out of town, dropping out of school, and taking a full-time job. Of the 17 women in the treatment group who did not complete treatment, 8 were contacted for a follow-up interview to determine their reasons for dropping out and their current symptomatology. Five of those women also agreed to complete the posttest measures so that comparisons could be made between treatment completers and treatment dropouts. Of the 30 women in the control condition, 10 did not agree to complete the posttest measures and interview, 18 declined the treatment after the waiting period, and 2 agreed to accept the treatment protocol following the waiting period. Thus, a total of 40 women completed the study, 20 in the treatment group and 20 in the waiting list control group. All results below are based on the treatment completers, unless otherwise specified.
Pretest Analysis

To determine if the procedures used to assign subjects to groups resulted in comparability of groups prior to treatment, several MANOVA and ANOVA tests involving pretest data were completed. However, before each analysis could be completed, assumptions underlying these analyses were conducted. A discussion of these assumptions, and the result of the tests of these assumptions are presented below, followed by a summary of the pretest group contrasts that were conducted to determine comparability of the two groups.

Analysis of variance statistical procedures require that two assumptions be met before they are used: (a) the variances of the two groups need to be equal for each dependent variable, and (b) the dependent variables need to be normally distributed, or come from normal populations. Two statistical tests of homogeneity of variance were completed for each dependent variable--Cochran's C and the Bartlett-Box F. ANOVA procedures also require that the variables are normally distributed. The Shapiro-Wilks statistic tests the assumption that the data are from a normal distribution. For each dependent measure below, the tests of the assumptions of homogeneity of variance and
normal distribution were completed. For those variables that violated the assumption of normal distribution, the Levene Statistic was used to determine the homogeneity of variance, because this test is less sensitive to the violation of the normality assumption than the other homogeneity of variance tests.

Though theoretically important assumptions underlying analysis of variance are often violated in practice, ANOVA procedures are frequently used in spite of violations of the assumptions because they are reasonably robust to departures from normality. Thus, for each dependent measure discussed below, the results of the tests of these assumptions are followed by the results of the appropriate group contrasts.

Multivariate analysis of variance assumes that the dependent variables have a multivariate normal distribution with the same variance-covariance matrix in each group. A necessary (though not sufficient) test of the normality assumption is the test of each dependent variable separately. Thus, Shapiro-Wilks tests of normality were used for each variable separately. In addition, the Bartlett's test of sphericity tests whether the variables are independent from each other, because multivariate analysis assumes that the variables are correlated. However, the homogeneity of variance assumption tests are conducted on the combined dependent measures, rather than
each dependent variable separately. Box's M multivariate test for homogeneity of dispersion matrices and the Bartlett's test of sphericity were conducted on the combined dependent measures for each multivariate analysis.

As in the case of ANOVA, assumptions for MANOVA are frequently not met. However, MANOVA procedures are also robust to violations of the assumptions of normality (Maxwell, 1992). Therefore, MANOVA results are reported below for the Clinician Rating Scale and the Anorexia Bulimia Inventory.

In addition to the above tests for integrity of the data, internal consistency reliability of the scores for each measure was assessed, using Cronbach's alpha. The internal consistency reliability results are presented below for each measure. These are summarized in Table 5. The pretest analyses are presented below, with demographic data presented first, followed by interview data, body image dissatisfaction measures, and the Anorexia Bulimia Inventory.

Demographic variables. The two groups did not differ significantly on any of the demographic variables except age and weight. Neither age nor weight was normally distributed in the sample (Shapiro-Wilks = .79 and .86, p < .01 for age and weight, respectively). Age did meet the assumption of homogeneity of variance (Cochran's C = .70,
Table 5
Cronbach’s Alpha Internal Consistency Reliability for All Measures

<table>
<thead>
<tr>
<th>Measure</th>
<th>Pretest</th>
<th>Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td>BASS (9-items)</td>
<td>.79</td>
<td>.84</td>
</tr>
<tr>
<td>Body Shape Questionnaire (34-items)</td>
<td>.94</td>
<td>.96</td>
</tr>
<tr>
<td>Body Esteem Subscales</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sexual Attractiveness (13-items)</td>
<td>.85</td>
<td>.85</td>
</tr>
<tr>
<td>Weight Concern (10-items)</td>
<td>.81</td>
<td>.84</td>
</tr>
<tr>
<td>Physical Conditioning (9-items)</td>
<td>.86</td>
<td>.84</td>
</tr>
<tr>
<td>Anorexia Bulimia Inventory (75-items)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Scale (alpha)</td>
<td>.94</td>
<td>.94</td>
</tr>
<tr>
<td>By Subscale</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent Conflict</td>
<td>.71</td>
<td>.75</td>
</tr>
<tr>
<td>Depressed Mood</td>
<td>.87</td>
<td>.88</td>
</tr>
<tr>
<td>Anxiety</td>
<td>.81</td>
<td>.84</td>
</tr>
<tr>
<td>Maladaptive cognitions</td>
<td>.83</td>
<td>.88</td>
</tr>
<tr>
<td>Anorexia</td>
<td>.73</td>
<td>.72</td>
</tr>
<tr>
<td>Anergia</td>
<td>.90</td>
<td>.87</td>
</tr>
<tr>
<td>Purging</td>
<td>.76</td>
<td>.78</td>
</tr>
<tr>
<td>Binging</td>
<td>.89</td>
<td>.90</td>
</tr>
<tr>
<td>Exercise</td>
<td>.38</td>
<td>.57</td>
</tr>
<tr>
<td>Clinician Rating Scale</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Global Severity (alpha)</td>
<td>.72</td>
<td>.74</td>
</tr>
<tr>
<td>Bulimic Severity</td>
<td>.56</td>
<td>.67</td>
</tr>
</tbody>
</table>
The mean age and weight of the treatment group were significantly higher than the mean of the control group ($F[1,38] = 4.94, p = .03; F[1,38] = 8.84, p = .005$ for age and weight, respectively). The mean age of the total sample was $25.3(8.8)$ years. However, the mean age of the treatment group was $28.3(10.05)$ years, while the mean age of the control group was $22.3(6.50)$ years.

The mean weight of the total sample was $145.47(32.92)$ pounds. However, the mean weight of the treatment group was $159.60(38.09)$ pounds, while the mean weight of the control group was $131.35(18.80)$ pounds. Age and weight were strongly correlated ($r = .67, p < .001$). Weight was chosen as the covariate in the test of group contrasts because of its importance in body image dissatisfaction. Weight was transformed using the natural logarithm transformation to meet the assumptions of normality, and the log transformed weight was used in all analyses.

**Interview data.** Internal consistency reliability and interrater reliability analyses were conducted for the Clinician Rating Scale. The internal consistency reliability was moderate (Cronbach’s alpha = .55) for the Bulimic Severity subscale scores, and also moderate (Cronbach’s alpha = .72) for the Global Severity scores (see Table 5). The interrater reliability correlation
coefficients ranged from $r = 0.65$ to $0.99$, $p < 0.001$. The correlations for two ratings of each item are presented in Table 6. Since the correlation between raters' scores was very high, the two raters' scores were averaged, producing an overall severity rating for each subscale of the Clinician Rating Scale.

Table 6

**Interrater Reliability for the Clinician Rating Scale**

<table>
<thead>
<tr>
<th>Item</th>
<th>$r$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item 1</td>
<td>0.73</td>
</tr>
<tr>
<td>Item 2</td>
<td>0.66</td>
</tr>
<tr>
<td>Item 3</td>
<td>0.75</td>
</tr>
<tr>
<td>Item 4</td>
<td>0.65</td>
</tr>
<tr>
<td>Item 5</td>
<td>0.92</td>
</tr>
<tr>
<td>Item 6</td>
<td>0.86</td>
</tr>
<tr>
<td>Item 7</td>
<td>0.84</td>
</tr>
<tr>
<td>Item 8</td>
<td>0.74</td>
</tr>
<tr>
<td>Item 9</td>
<td>0.99</td>
</tr>
<tr>
<td>Item 10</td>
<td>0.92</td>
</tr>
<tr>
<td>Item 11</td>
<td>0.91</td>
</tr>
<tr>
<td>Item 12</td>
<td>0.92</td>
</tr>
</tbody>
</table>

$p < 0.001$ for all correlations
For the Clinician Rating Scale, the assumptions of homogeneity of variance and distribution normality were tested first. Most of the Clinician Rating Scale subscales did not satisfy the univariate homogeneity of variance tests or the assumptions of normal distributions, as shown in Table 7. However, analysis of variance indicated that the two groups were not statistically significantly different from each other on any subscales of the Clinician Rating Scale: fear, feeling fat, anorexia/weight loss, menstruation, binging, control, vomiting, laxative use, dieting, or exercise. The pretest mean scores for each of these subscales are presented in Table 8.

In addition, the combined measures of total Bulimic Severity and Global Severity did not meet the assumptions of normality. However, these combined measures did meet the assumptions of homogeneity of variance, based on all three tests of this assumption. Therefore, ANOVA procedures were used for these variables. The two groups were not statistically significantly different from one another on the Clinician's Rating Scale Global Severity Index or the Bulimic Severity Index at pretest ($F_{[1,38]} = 2.48, p = .12$; $F_{[1,38]} = 1.97, p = .17$ for Global Severity and Bulimic Severity, respectively). When log transformed weight was used as a covariate, the two groups were still not significantly different from one other at pretest.
Table 7

Tests of Assumptions of Normality and Homogeneity of Variance for CRS Subscales

<table>
<thead>
<tr>
<th></th>
<th>At Pretest</th>
<th>At Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Anorexia/Weight Loss</strong></td>
<td>Cochran's $C(19,2) = .74, p = .03$</td>
<td>$C(19,2) = .84, p = .001$</td>
</tr>
<tr>
<td></td>
<td>Bartlett-Box $F(1,4332) = 4.80, p = .03$</td>
<td>$F(1,4332) = 11.28, p = .001$</td>
</tr>
<tr>
<td></td>
<td>Shapiro-Wilk's $W = .59, df = 40, p = &lt; .01$</td>
<td>$.46, p = &lt; .01</td>
</tr>
<tr>
<td><strong>Binging</strong></td>
<td>Cochran's $C(19,2) = .56, p = .58$</td>
<td>$C(19,2) = .55, p = .70$</td>
</tr>
<tr>
<td></td>
<td>Bartlett-Box $F(1,4332) = .31, p = .58$</td>
<td>$F(1,4332) = .15, p = .70$</td>
</tr>
<tr>
<td></td>
<td>Shapiro-Wilk's $W = .99, df = 40, p = &lt; .01$</td>
<td>$.86, p = &lt; .01</td>
</tr>
<tr>
<td><strong>Control</strong></td>
<td>Cochran's $C(19,2) = .55, p = .69$</td>
<td>$C(19,2) = .76, p = .01$</td>
</tr>
<tr>
<td></td>
<td>Bartlett-Box $F(1,4332) = .16, p = .69$</td>
<td>$F(1,4332) = 6.05, p = .01$</td>
</tr>
<tr>
<td></td>
<td>Shapiro-Wilk's $W = .94, df = 40, p = .07$</td>
<td>$.92, p = .02</td>
</tr>
<tr>
<td><strong>Dieting</strong></td>
<td>Cochran's $C(19,2) = .60, p = .37$</td>
<td>$C(19,2) = .64, p = .20$</td>
</tr>
<tr>
<td></td>
<td>Bartlett-Box $F(1,4332) = .82, p = .37$</td>
<td>$F(1,4332) = 1.62, p = .20$</td>
</tr>
<tr>
<td></td>
<td>Shapiro-Wilk's $W = .90, df = 40, p = &lt; .01$</td>
<td>$.87, p = &lt; .01</td>
</tr>
<tr>
<td><strong>Exercise</strong></td>
<td>Cochran's $C(19,2) = .54, p = .73$</td>
<td>$C(19,2) = .57, p = .52$</td>
</tr>
<tr>
<td></td>
<td>Bartlett-Box $F(1,4332) = .12, p = .73$</td>
<td>$F(1,4332) = .40, p = .52$</td>
</tr>
<tr>
<td></td>
<td>Shapiro-Wilk's $W = .86, df = 40, p = &lt; .01$</td>
<td>$.92, p = &lt; .01</td>
</tr>
<tr>
<td><strong>Fear of Fat</strong></td>
<td>Cochran's $C(19,2) = .63, p = .24$</td>
<td>$C(19,2) = .57, p = .54$</td>
</tr>
<tr>
<td></td>
<td>Bartlett-Box $F(1,4332) = 1.38, p = .24$</td>
<td>$F(1,4332) = .36, p = .54$</td>
</tr>
<tr>
<td></td>
<td>Shapiro-Wilk's $W = .93, df = 40, p = .03$</td>
<td>$.95, p = .09</td>
</tr>
</tbody>
</table>

*(table continues)*
<table>
<thead>
<tr>
<th></th>
<th>At Pretest</th>
<th>At Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Feeling Fat</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cochrans C(19,2)</td>
<td>.66, p = .16</td>
<td>C(19,2) = .61, p = .36</td>
</tr>
<tr>
<td>Bartlett-Box F(1,4332)</td>
<td>1.98, p = .16</td>
<td>F(1,4332) = .83, p = .36</td>
</tr>
<tr>
<td>Shapiro-Wilks</td>
<td>.92, df = 40, p = &lt; .01</td>
<td>.94, p = .04</td>
</tr>
<tr>
<td><strong>Laxative Use</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cochrans C(19,2)</td>
<td>.92, p = .00</td>
<td>C(19,2) = .76, p = .02</td>
</tr>
<tr>
<td>Bartlett-Box F(1,4332)</td>
<td>22.24, p = .00</td>
<td>F(1,4332) = 5.94, p = .02</td>
</tr>
<tr>
<td>Shapiro-Wilks</td>
<td>.48, df = 40, p = &lt; .10</td>
<td>.45, p = &lt; .01</td>
</tr>
<tr>
<td><strong>Menstruation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cochrans C(19,2)</td>
<td>.67, p = .13</td>
<td>C(19,2) = .56, p = .57</td>
</tr>
<tr>
<td>Bartlett-Box F(1,4332)</td>
<td>2.33, p = .13</td>
<td>F(1,4332) = .32, p = .57</td>
</tr>
<tr>
<td>Shapiro-Wilks</td>
<td>.54, df = 40, p = &lt; .01</td>
<td>.56, p = &lt; .01</td>
</tr>
<tr>
<td><strong>Vomiting</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cochrans C(19,2)</td>
<td>.72, p = .05</td>
<td>C(19,2) = .80, p = .003</td>
</tr>
<tr>
<td>Bartlett-Box F(1,4332)</td>
<td>3.96, p = .05</td>
<td>F(1,4332) = 8.57, p = .003</td>
</tr>
<tr>
<td>Shapiro-Wilks</td>
<td>.53, df = 40, p = &lt; .01</td>
<td>.54, p = &lt; .01</td>
</tr>
<tr>
<td><strong>Bulimic Severity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cochrans C(19,2)</td>
<td>.61, p = .30</td>
<td>C(19,2) = .65, p = .18</td>
</tr>
<tr>
<td>Bartlett-Box F(1,4332)</td>
<td>1.07, p = .30</td>
<td>F(1,4332) = 1.76, p = .18</td>
</tr>
<tr>
<td>Shapiro-Wilks</td>
<td>.92, df = 40, p = &lt; .01</td>
<td>.87, p = &lt; .01</td>
</tr>
<tr>
<td><strong>Global Severity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cochrans C(19,2)</td>
<td>.61, p = .32</td>
<td>C(19,2) = .61, p = .36</td>
</tr>
<tr>
<td>Bartlett-Box F(1,4332)</td>
<td>.99, p = .32</td>
<td>F(1,4332) = .84, p = .36</td>
</tr>
<tr>
<td>Shapiro-Wilks</td>
<td>.94, df = 40, p = .07</td>
<td>.90, p = &lt; .01</td>
</tr>
</tbody>
</table>
Table 8

Pretest Group Means for Eating Measures

<table>
<thead>
<tr>
<th></th>
<th>Mean (SD)</th>
<th>Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Experimental</td>
<td>Control</td>
</tr>
<tr>
<td><strong>Clinician Rating Scale</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Global Severity</td>
<td>3.94(1.68)</td>
<td>4.89(2.12)</td>
</tr>
<tr>
<td>Bulimic Severity</td>
<td>4.60(2.04)</td>
<td>5.64(2.60)</td>
</tr>
<tr>
<td>Fear</td>
<td>6.76(3.91)</td>
<td>7.38(2.98)</td>
</tr>
<tr>
<td>Feel Fat</td>
<td>4.10(3.33)</td>
<td>5.16(2.40)</td>
</tr>
<tr>
<td>Anorexia</td>
<td>0.40(0.99)</td>
<td>1.20(1.67)</td>
</tr>
<tr>
<td>Menstruation</td>
<td>0.51(1.56)</td>
<td>1.35(2.23)</td>
</tr>
<tr>
<td>Binging</td>
<td>7.29(4.64)</td>
<td>5.95(4.07)</td>
</tr>
<tr>
<td>Control</td>
<td>7.54(3.29)</td>
<td>7.03(3.00)</td>
</tr>
<tr>
<td>Vomiting</td>
<td>1.15(3.57)</td>
<td>3.36(5.71)</td>
</tr>
<tr>
<td>Laxatives</td>
<td>0.51(1.61)</td>
<td>2.87(5.38)</td>
</tr>
<tr>
<td>Dieting</td>
<td>5.50(4.55)</td>
<td>8.38(5.62)</td>
</tr>
<tr>
<td>Exercise</td>
<td>5.59(3.50)</td>
<td>6.27(3.80)</td>
</tr>
<tr>
<td><strong>Anorexia Bulimia Inventory</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent Conflict</td>
<td>1.36(.69)</td>
<td>1.24(.58)</td>
</tr>
<tr>
<td>Depressed Mood</td>
<td>1.33(.48)</td>
<td>1.60(.73)</td>
</tr>
<tr>
<td>Anxiety</td>
<td>1.48(.53)</td>
<td>1.50(.59)</td>
</tr>
<tr>
<td>Anorexia</td>
<td>0.87(.45)</td>
<td>1.20(.51)</td>
</tr>
<tr>
<td>Anergia</td>
<td>1.68(.71)</td>
<td>1.91(.59)</td>
</tr>
<tr>
<td>Purging</td>
<td>0.36(.36)</td>
<td>0.88(.67)</td>
</tr>
<tr>
<td>Binging</td>
<td>1.59(.75)</td>
<td>1.49(.88)</td>
</tr>
<tr>
<td>Exercise</td>
<td>1.86(.34)</td>
<td>1.87(.60)</td>
</tr>
<tr>
<td>Maladaptive Cognitions</td>
<td>2.07(.57)</td>
<td>2.07(.47)</td>
</tr>
</tbody>
</table>

**Note.**  SD = Standard Deviation.
(F [1,37] = .85, p = .36; F [1,37] = .99, p = .36 for Global Severity and Bulimic Severity, respectively).

Tests of the assumptions underlying multivariate analysis for the Clinician’s Rating Scale (CRS) were also performed. Box’s M test for homogeneity of the dispersion matrices indicated that the CRS met this assumption at pretest (Box’s M = 99.85, F [55,4663] = 1.29, p = .07). Bartlett’s test of sphericity (122.16 with 45 df, p < .001) also indicated that the variables were not independent. A multivariate analysis of variance involving pretest data on the Clinician’s Rating Scale was not statistically significant (Wilks Lambda F[10,29] = 1.027, p = .45). Further, when weight was used as a covariate, Wilks Lambda F(10,28) = .77, p = .65, statistically significant differences were still not present. Thus, the two groups were not significantly different at pretest on any aspect of the Clinician Rating Scale.

**Body image dissatisfaction measures.** Internal consistency reliability for all of the body image dissatisfaction scale scores was in the moderately high range, as shown in Table 5. Cronbach’s alpha was moderate (.79) for the Body Area Satisfaction scores, and was high for the Body Shape Questionnaire (.94). Cronbach’s alpha for the Body Esteem Scale subscale scores were .85 for
Sexual Attractiveness, .81 for Weight Concern, and .86 for Physical Conditioning at pretest.

For all of the body image dissatisfaction measures, the assumptions of homogeneity of variance and normal distribution were tested. All of the subscales of the Body Esteem Scale, the total score for the Body Shape Questionnaire, and the total Body Area Satisfaction score met the assumption for univariate homogeneity of variance tests and the assumption of normality of distribution. The results of the tests of these assumptions are listed in Table 9. Thus, univariate ANOVAs were conducted for these measures. The results are presented below.

The pretest mean scores for the body image dissatisfaction measures are presented in Table 10. A one-way analysis of variance revealed that the two groups were not statistically significantly different at pretest on any subscales of the Body Esteem Scale and the Body Shape Questionnaire. Given that the treatment group was significantly heavier than the control group, one might expect the two groups to differ on these body image dissatisfaction measures. Yet, when weight was controlled for in the analysis, the two groups still did not differ on these measures ($F[1,37] = 1.78, p = .19$ for Sexual Attractiveness; $F[1,37] = 3.00, p = .09$ for Physical Conditioning; $F[1,37] = 1.66, p = .21$ for Weight Concern;
TABLE 9

Tests of Assumptions of Normality and Homogeneity of Variance for Body Image Measures

<table>
<thead>
<tr>
<th>Measure</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bass</strong></td>
<td></td>
</tr>
<tr>
<td>Cochran's C(19,2)</td>
<td>p = .21</td>
</tr>
<tr>
<td>Bartlett-Box F(1,4332) = 1.56</td>
<td>p = .21</td>
</tr>
<tr>
<td>Shapiro-Wilk's = .98</td>
<td>p = .63</td>
</tr>
<tr>
<td><strong>Posttest Bass</strong></td>
<td></td>
</tr>
<tr>
<td>Cochran's C(19,2)</td>
<td>p = .95</td>
</tr>
<tr>
<td>Bartlett-Box F(1,4332) = .003</td>
<td>p = .95</td>
</tr>
<tr>
<td>Shapiro-Wilk's = .95</td>
<td>p = .13</td>
</tr>
<tr>
<td><strong>BSQ</strong></td>
<td></td>
</tr>
<tr>
<td>Cochran's C(19,2)</td>
<td>p = .45</td>
</tr>
<tr>
<td>Bartlett-Box F(1,4332) = .57</td>
<td>p = .45</td>
</tr>
<tr>
<td>Shapiro-Wilk's = .95</td>
<td>p = .19</td>
</tr>
<tr>
<td><strong>Posttest BSQ</strong></td>
<td></td>
</tr>
<tr>
<td>Cochran's C(19,2)</td>
<td>p = .36</td>
</tr>
<tr>
<td>Bartlett-Box F(1,4332) = .85</td>
<td>p = .36</td>
</tr>
<tr>
<td>Shapiro-Wilk's = .94</td>
<td>p = .04</td>
</tr>
<tr>
<td><strong>Physical Conditioning</strong></td>
<td></td>
</tr>
<tr>
<td>Cochran's C(19,2)</td>
<td>p = .23</td>
</tr>
<tr>
<td>Bartlett-Box F(1,4332) = 1.46</td>
<td>p = .23</td>
</tr>
<tr>
<td>Shapiro-Wilk's = .95</td>
<td>p = .09</td>
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</tbody>
</table>

(table continues)
### Significance

<table>
<thead>
<tr>
<th>Posttest Physical Conditioning</th>
<th>p = .55</th>
</tr>
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<tbody>
<tr>
<td>Cochran's C(19, 2) = .57</td>
<td></td>
</tr>
<tr>
<td>Bartlett-Box F(1, 4332) = .36</td>
<td>p = .55</td>
</tr>
<tr>
<td>Shapiro-Wilks = .96</td>
<td>p = .08</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sexual Attractiveness</th>
<th>p = .14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cochran's C(19, 2) = .67</td>
<td></td>
</tr>
<tr>
<td>Bartlett-Box F(1, 4332) = 2.17</td>
<td>p = .14</td>
</tr>
<tr>
<td>Shapiro-Wilks = .96</td>
<td>p = .25</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Posttest Sexual Attractiveness</th>
<th>p = .17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cochran's C(19, 2) = .66</td>
<td></td>
</tr>
<tr>
<td>Bartlett-Box F(1, 4332) = 1.88</td>
<td>p = .17</td>
</tr>
<tr>
<td>Shapiro-Wilks = .97</td>
<td>p = .52</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Weight Concern</th>
<th>p = .19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cochran's C(19, 2) = .65</td>
<td></td>
</tr>
<tr>
<td>Bartlett-Box F(1, 4332) = 1.66</td>
<td>p = .19</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Posttest Weight Concern</th>
<th>p = .18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cochran's C(19, 2) = .65</td>
<td></td>
</tr>
<tr>
<td>Bartlett-Box F(1, 4332) = 1.84</td>
<td>p = .18</td>
</tr>
<tr>
<td>Shapiro-Wilks = .9420</td>
<td>p = .06</td>
</tr>
</tbody>
</table>

$F_{[1, 37]} = 2.64, \ p = .11$ for BSQ). However, log transformed weight was still used as a covariate in the final posttest analyses of the above measures.

The two groups were not statistically significantly different at pretest on the Body Area Satisfaction Scale.
Table 10

Pretest Group Means for Body Image Measures

<table>
<thead>
<tr>
<th></th>
<th>Experimental Mean</th>
<th>Control Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Body Esteem Scale</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sexual Attractiveness</td>
<td>42.50(9.23)</td>
<td>39.70(6.53)</td>
</tr>
<tr>
<td>Weight Concern</td>
<td>17.35(6.37)</td>
<td>17.80(4.71)</td>
</tr>
<tr>
<td>Physical Conditioning</td>
<td>27.25(8.27)</td>
<td>25.00(6.23)</td>
</tr>
<tr>
<td><strong>Body Area Satisfaction Scale</strong></td>
<td>2.66(0.66)</td>
<td>2.50(0.49)</td>
</tr>
<tr>
<td><strong>Body Shape Questionnaire</strong></td>
<td>133.95(21.96)</td>
<td>136.20(26.17)</td>
</tr>
</tbody>
</table>

*Note. SD = Standard Deviation*

\(F [1,39] = .714, \ p = .40\). However, when weight was used as a covariate, the two groups were significantly different at pretest \(F [1,37] = 7.27, \ p = .01\). The treatment group mean was 2.66, while the control group mean was 2.50 on this measure at pretreatment. Because the two groups differed on this measure, the pretest BASS score and weight were both used as covariates in posttest analyses.

Anorexia bulimia inventory. Internal consistency reliability for the ABI subscale scores ranged from low (Cronbach's alpha = .38 for Exercise) to moderately high
(Cronbach’s alpha = .90 for Anergia), and are presented in Table 5.

To complete multivariate analysis of variance using the combined subscales of the ABI, tests of the assumptions of ANOVA were conducted. As shown in Table 11, the results indicate that all but two of the subscales, Purging and Exercise, met both assumptions when each subscale was tested separately. For the Purging subscale, the Levene statistic was used to assess homogeneity of variance because it is less sensitive to violations of the assumptions of normality. The results of this test indicated that the Purging subscale still did not meet the assumption for homogeneity of variance at pretest. Further analysis of the MANOVA assumptions were conducted, and revealed that the combined subscales of the ABI met those assumptions (Box’s M = 65.23, $F_{[45,4743]} = 1.08$, $p = .34$). Bartlett’s test of sphericity also indicated that the variables were not independent ($153.40$ with $36$ df, $p < .001$). Because the majority of the subscales met the assumptions, and the multivariate assumptions were met, multivariate group contrasts were conducted for the ABI.

A MANOVA revealed that the two groups were statistically significantly different from one another on the combination of the Anorexia Bulimia Inventory subscales (Wilks Lambda $F_{[9,30]} = .72$, $p = .035$) at pretest when
TABLE 11
Tests of Assumptions of Normality and Homogeneity of Variance for the ABI Subscales

<table>
<thead>
<tr>
<th></th>
<th>At Pretest</th>
<th>At Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Anergia</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cochrans $C(19,2) = .59, \ p = .42$</td>
<td></td>
<td>$C(19,2) = .50, \ p = .98$</td>
</tr>
<tr>
<td>Bartlett-Box $F(1,4332) = .66, \ p = .42$</td>
<td></td>
<td>$F(1,4332) = .001, \ p = .98$</td>
</tr>
<tr>
<td>Shapiro-Wilks $= .95, \ df = 40, \ p = .09$</td>
<td></td>
<td>$.93, \ p = .04$</td>
</tr>
<tr>
<td><strong>Anorexia</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cochrans $C(19,2) = .56, \ p = .61$</td>
<td></td>
<td>$C(19,2) = .57, \ p = .57$</td>
</tr>
<tr>
<td>Bartlett-Box $F(1,4332) = .27, \ p = .61$</td>
<td></td>
<td>$F(1,4332) = .32, \ p = .57$</td>
</tr>
<tr>
<td>Shapiro-Wilks $= .94, \ df = 40, \ p = .05$</td>
<td></td>
<td>$.93, \ p = .02$</td>
</tr>
<tr>
<td><strong>Anxiety</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cochrans $C(19,2) = .55, \ p = .63$</td>
<td></td>
<td>$C(19,2) = .62, \ p = .29$</td>
</tr>
<tr>
<td>Bartlett-Box $F(1,4332) = .23, \ p = .63$</td>
<td></td>
<td>$F(1,4332) = 1.14, \ p = .29$</td>
</tr>
<tr>
<td>Shapiro-Wilks $= .98, \ df = 40, \ p = .59$</td>
<td></td>
<td>$.93, \ p = .03$</td>
</tr>
<tr>
<td><strong>Binging</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cochrans $C(19,2) = .58, \ p = .49$</td>
<td></td>
<td>$C(19,2) = .78, \ p = .01$</td>
</tr>
<tr>
<td>Bartlett-Box $F(1,4332) = .48, \ p = .49$</td>
<td></td>
<td>$F(1,4332) = 7.10, \ p = .01$</td>
</tr>
<tr>
<td>Shapiro-Wilks $= .95, \ df = 40, \ p = .19$</td>
<td></td>
<td>$.93, \ p = .02$</td>
</tr>
<tr>
<td><strong>Depression</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cochrans $C(19,2) = .69, \ p = .08$</td>
<td></td>
<td>$C(19,2) = .70, \ p = .07$</td>
</tr>
<tr>
<td>Bartlett-Box $F(1,4332) = 3.17, \ p = .08$</td>
<td></td>
<td>$F(1,4332) = 3.32, \ p = .07$</td>
</tr>
<tr>
<td>Shapiro-Wilks $= .97, \ df = 40, \ p = .55$</td>
<td></td>
<td>$.94, \ p = .05$</td>
</tr>
</tbody>
</table>

*(table continues)*
<table>
<thead>
<tr>
<th>At Pretest</th>
<th>At Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Exercise</strong></td>
<td><strong>Exercise</strong></td>
</tr>
<tr>
<td>Cochrans C(19,2) = .76, p = .02</td>
<td>Cochrans C(19,2) = .61, p = .34</td>
</tr>
<tr>
<td>Bartlett-Box $F(1,4332) = 5.67$, p = .02</td>
<td>$F(1,4332) = .91$, p = .34</td>
</tr>
<tr>
<td>Shapiro-Wilks = .96, $df = 40$, p = .33</td>
<td>.96, p = .37</td>
</tr>
<tr>
<td><strong>Maladaptive Cognitions</strong></td>
<td><strong>Maladaptive Cognitions</strong></td>
</tr>
<tr>
<td>Cochrans C(19,2) = .59, p = .43</td>
<td>Cochrans C(19,2) = .57, p = .54</td>
</tr>
<tr>
<td>Bartlett-Box $F(1,4332) = .61$, p = .43</td>
<td>$F(1,4332) = .38$, p = .54</td>
</tr>
<tr>
<td>Shapiro-Wilks = .95, $df = 40$, p = .15</td>
<td>.97, p = .52</td>
</tr>
<tr>
<td><strong>Parent</strong></td>
<td><strong>Parent</strong></td>
</tr>
<tr>
<td>Cochrans C(19,2) = .58, p = .47</td>
<td>Cochrans C(19,2) = .52, p = .85</td>
</tr>
<tr>
<td>Bartlett-Box $F(1,4332) = .52$, p = .47</td>
<td>$F(1,4332) = .04$, p = .85</td>
</tr>
<tr>
<td>Shapiro-Wilks = .95, $df = 40$, p = .10</td>
<td>.96, p = .25</td>
</tr>
<tr>
<td><strong>Purge</strong></td>
<td><strong>Purge</strong></td>
</tr>
<tr>
<td>Cochrans C(19,2) = .77, p = .01</td>
<td>Cochrans C(19,2) = .63, p = .24</td>
</tr>
<tr>
<td>Bartlett-Box $F(1,4332) = 6.62$, p = .01</td>
<td>$F(1,4332) = 1.37$, p = .24</td>
</tr>
<tr>
<td>Shapiro-Wilks = .85, $df = 40$, p = &lt; .01</td>
<td>.82, p = .01</td>
</tr>
<tr>
<td><strong>Combined Eating Scales</strong></td>
<td><strong>Combined Eating Scales</strong></td>
</tr>
<tr>
<td>Cochrans C(19,2) = .71, p = .06</td>
<td>Cochrans C(19,2) = .73, p = .04</td>
</tr>
<tr>
<td>Bartlett-Box $F(1,4332) = 3.44$, p = .06</td>
<td>$F(1,4332) = 4.28$, p = .04</td>
</tr>
<tr>
<td>Shapiro-Wilks = .97, $df = 40$, p = .45</td>
<td>.94, p = .05</td>
</tr>
<tr>
<td><strong>Combined Feeling Scales</strong></td>
<td><strong>Combined Feeling Scales</strong></td>
</tr>
<tr>
<td>Cochrans C(19,2) = .59, p = .45</td>
<td>Cochrans C(19,2) = .72, p = .05</td>
</tr>
<tr>
<td>Bartlett-Box $F(1,4332) = .57$, p = .45</td>
<td>$F(1,4332) = 3.97$, p = .05</td>
</tr>
<tr>
<td>Shapiro-Wilks = .97, $df = 40$, p = .55</td>
<td>.96, p = .35</td>
</tr>
</tbody>
</table>
weight was not used as a covariate. With weight used as a covariate, the two groups were also statistically significantly different from each other (Wilks Lambda $\mathbf{F}$ (9, 29) = 2.26, $p = .046$). One-way analyses of variance were conducted on each of the subscales of the ABI to determine on which subscales the groups differed. The two groups were statistically significantly different on the ABI Purging subscale ($\mathbf{F}$ [1, 37] = 7.27, $p = .01$). On the Purging subscale, the mean of the control group was higher than the mean of the treatment group (Purging Mean(SD) = .36[.36], Mean(SD) = .88[.67] for treatment and control groups; respectively). Thus, the Purging subscale served as a covariate in posttest analyses. The two groups were not statistically significantly different at pretest on other ABI subscales: Parent Conflict, Depressed Mood, Anxiety, Maladaptive Cognitions, Anergia, Binging, or Exercise (see Table 8).

Posttest Analyses

Posttest analyses are presented below. These follow the order of the research questions. Where appropriate, pretest measures were used as covariates. Log-transformed weight was used as a covariate in all posttest analyses. The means of all posttest measures are presented in Tables 12 and 13. As in pretest analyses, the underlying
Table 12

**Posttest Group Means for Body Image Measures**

<table>
<thead>
<tr>
<th></th>
<th>Experimental Mean (SD)</th>
<th>Control Mean (SD)</th>
<th>Effect Size (SMD)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Body Esteem Scale</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sexual Attractiveness</td>
<td>45.55 (8.14)</td>
<td>40.10 (5.9)</td>
<td>.92</td>
</tr>
<tr>
<td>Weight Concern</td>
<td>21.75 (6.98)</td>
<td>19.15 (5.08)</td>
<td>.51</td>
</tr>
<tr>
<td>Physical Conditioning</td>
<td>30.80 (6.62)</td>
<td>25.50 (5.75)</td>
<td>.92</td>
</tr>
<tr>
<td><strong>Body Area Satisfaction Scale</strong></td>
<td>3.10 (.64)</td>
<td>2.63 (.63)</td>
<td>.75</td>
</tr>
<tr>
<td><strong>Body Shape Questionnaire</strong></td>
<td>111.45 (23.30)</td>
<td>131.20 (28.87)</td>
<td>.68</td>
</tr>
</tbody>
</table>

Note: SD = Standard Deviation; SMD = Standard Mean Difference

Assumptions were tested for each dependent variable prior to the use of the particular statistical procedure for group contrasts.

In addition to following the same statistical significance testing procedures used at pretest on the posttest measures, other analyses were conducted. For each measure, standard mean difference effect sizes were calculated for posttest data. The treatment effect size was calculated by subtracting the mean of the posttreatment control group from the posttreatment experimental group and
Table 13
Posttest Group Means for Eating Measures

<table>
<thead>
<tr>
<th>Clinician Rating Scale</th>
<th>Mean (SD)</th>
<th>Mean (SD)</th>
<th>Effect Size (SMD)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Experimental</td>
<td>Control</td>
<td></td>
</tr>
<tr>
<td>Global Severity</td>
<td>2.97(1.58)</td>
<td>4.47(1.96)</td>
<td>.76</td>
</tr>
<tr>
<td>Bulimic Severity</td>
<td>3.33(2.00)</td>
<td>5.09(2.74)</td>
<td>.64</td>
</tr>
<tr>
<td>Fear</td>
<td>5.26(3.32)</td>
<td>7.46(2.87)</td>
<td>.76</td>
</tr>
<tr>
<td>Feel Fat</td>
<td>3.20(2.25)</td>
<td>4.82(1.82)</td>
<td>.89</td>
</tr>
<tr>
<td>Anorexia</td>
<td>0.80(2.37)</td>
<td>0.60(1.04)</td>
<td>.19</td>
</tr>
<tr>
<td>Menstruation</td>
<td>0.50(1.65)</td>
<td>1.27(1.89)</td>
<td>.40</td>
</tr>
<tr>
<td>Binging</td>
<td>3.16(3.42)</td>
<td>4.99(3.75)</td>
<td>.48</td>
</tr>
<tr>
<td>Control</td>
<td>5.29(4.00)</td>
<td>6.59(2.22)</td>
<td>.58</td>
</tr>
<tr>
<td>Vomiting</td>
<td>0.84(2.92)</td>
<td>3.77(5.91)</td>
<td>.49</td>
</tr>
<tr>
<td>Laxatives</td>
<td>0.72(2.76)</td>
<td>2.36(4.95)</td>
<td>.33</td>
</tr>
<tr>
<td>Dieting</td>
<td>4.08(4.24)</td>
<td>7.36(5.72)</td>
<td>.57</td>
</tr>
<tr>
<td>Exercise</td>
<td>5.86(3.53)</td>
<td>5.45(3.04)</td>
<td>.13</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Anorexia Bulimia Inventory</th>
<th>Mean (SD)</th>
<th>Mean (SD)</th>
<th>Effect Size (SMD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent Conflict</td>
<td>1.12(.61)</td>
<td>1.15(.58)</td>
<td>.05</td>
</tr>
<tr>
<td>Depressed Mood</td>
<td>0.96(.42)</td>
<td>1.43(.64)</td>
<td>.73</td>
</tr>
<tr>
<td>Anxiety</td>
<td>1.05(.48)</td>
<td>1.36(.61)</td>
<td>.50</td>
</tr>
<tr>
<td>Anorexia</td>
<td>0.76(.49)</td>
<td>1.12(.43)</td>
<td>.83</td>
</tr>
<tr>
<td>Anergia</td>
<td>1.35(.59)</td>
<td>1.77(.59)</td>
<td>.70</td>
</tr>
<tr>
<td>Purging</td>
<td>0.31(.46)</td>
<td>.74(.61)</td>
<td>.70</td>
</tr>
<tr>
<td>Binging</td>
<td>0.85(.45)</td>
<td>1.31(.86)</td>
<td>.54</td>
</tr>
<tr>
<td>Exercise</td>
<td>1.84(.35)</td>
<td>1.87(.59)</td>
<td>.05</td>
</tr>
<tr>
<td>Maladaptive Cognitions</td>
<td>1.53(.55)</td>
<td>1.87(.63)</td>
<td>.53</td>
</tr>
</tbody>
</table>

Note:  SD = Standard Deviation;  SMD = Standard Mean Difference
then dividing by the standard deviation of the control group at posttreatment. Estimated multivariate treatment effect sizes were also calculated using the omega-squared metric discussed by Maxwell (1992), where appropriate (omega-squared is an indicator of the proportion of variance explained by the linear combination of the independent variables). The rationale for using effect size calculations at posttest follows, along with a discussion of the magnitude of effect sizes.

Statistical significance testing is highly dependent on sample size. In a large sample, statistical significance may be reached even though the differences between groups are not meaningful. Furthermore, in a small sample, important differences may be overlooked because statistical significance is not reached. The use of standard mean difference effect sizes is one way of uncovering important differences between groups in a small sample because the calculations are not dependent on sample size. Convention in the research literature is that standard mean difference effect sizes are considered to be low ($ES = .50$), moderate ($ES = .70$), and high ($ES = .90$ and above). Multivariate effect sizes use a different metric, and are considered to be low, moderate, and high at .20, .30, and .50, respectively. The results of the effect size calculations
for the measures in this study are listed below, by measure, and in Tables 12 and 13.

Research questions 1 and 2. The first two research questions will be discussed together, as they are related to each other. The first question was, Does Cash's (1991) standardized audio taped cognitive behavioral treatment package cause a decrease in body image dissatisfaction (or an increase in body image satisfaction) when administered in a self-directed manner? The second question was, Does treatment positively alter body image dissatisfaction to a greater degree than no treatment? The results for each body image dissatisfaction measure are examined, in turn, below. All of the body image dissatisfaction measures were analyzed using one-way analysis of variance, with weight as a covariate since the two groups were significantly different on weight at pretest.

At posttest, on the Body Area Satisfaction Scale, the underlying assumptions for ANOVA were met. The treatment group scored higher (Mean[SD] = 3.10[.64]) than the control group (Mean[SD] = 2.63[.63]) when no covariate was used (F [1,39] = 5.47, p = .03). However, the two groups differed on this measure at pretest. Therefore, the pretest score and weight were used as covariates in an additional analysis. When these covariates were used in the analysis, the two groups approached statistical significance on this
measure ($F_{[1, 36]} = 3.26, p = .08$). Thus, the treatment group appeared to improve relative to the control group on this body image measure. Also, the mean treatment effect size was moderately high ($ES = .75$) for the Body Area Satisfaction Scale (Figure 1).

On the three Body Esteem Scale subscales, assumptions underlying the ANOVA procedure were met, as shown in Table 10. The treatment group mean was statistically significantly higher than the control group mean when weight was used as a covariate in the analysis. For the Sexual Attractiveness subscale (Figure 2), the treatment group showed a mean score of 45.55(8.14) while the control group had a mean score of 40.10(5.90) ($F_{[1, 37]} = 5.45, p = .03$). The mean treatment effect size was high ($ES = .92$). On the Physical Conditioning subscale (Figure 3), the mean of the treatment group was 30.80(6.62) and the mean of the control group was 25.50(5.75), $F_{[1, 37]} = 8.82, p = .005$. The mean difference effect size was high ($ES = .92$). The two groups were also statistically significantly different on the Weight Concern subscale of the Body Esteem Scale (treatment mean = 21.75(6.90), control mean = 19.15(5.08), $F_{[1, 37]} = 5.21, p = .03$). In addition, the calculation of the mean treatment effect size for this subscale revealed that the treatment group improved relative to the waiting-list control group ($ES = .51$) (Figure 4).
Figure 1. Body area satisfaction scale (pre-/posttest changes).
Figure 2. BES sexual attractiveness (pre-/posttest changes).
Figure 3. BES physical conditioning (pre-/posttest changes).
Figure 4. BES weight concern (pre-/posttest changes).
On the Body Shape Questionnaire, all underlying assumptions for ANOVA were met. The treatment group mean was statistically significantly lower than the control group mean 111.45(23.30) versus 131.20(28.87), both when weight was controlled for in the analysis ($F[1,37] = 6.91, p = .01$) and also when weight was not used as a covariate ($F[1,39] = 5.67, p = .02$). On this measure, lower scores represent less difficulty with body shape. The mean treatment effect size for this measure was moderately high ($ES = .68$), which indicates that the treatment group improved relative to the control group (Figure 5).

Research question 3. The third research question asked, Does Cash's (1991) standardized cognitive behavioral treatment package for improving body image have an impact on eating disorder symptomatology such as binging and purging, and concomitant symptoms such as depression and anxiety? The two measures that assessed eating-disorder symptomatology and concomitant symptoms are the Clinician Rating Scale and the Anorexia Bulimia Inventory. Multivariate analysis of variance was used to determine whether the two groups differed on the overall measures at posttest, and one-way analysis of variance was used to determine which subscale contributed to the differences between groups. Results on each measure are presented, in turn, below.
Figure 5. Body shape questionnaire (pre-/posttest changes).
The two groups were not significantly different on any of the subscales or the overall Clinician Rating Scale at pretest. Also, the assumptions for ANOVA were not met. At posttest, the assumptions for ANOVA and MANOVA were tested, and again, the underlying assumptions were not met for any of the subscales (see Table 6). However, the underlying assumptions of homogeneity of variance were met for the combined dependent variables (Bulimic Severity and Global Severity) using the Levene statistic. The assumption of normal distribution was not met at posttest. Therefore, analysis of variance procedures were used.

With log transformed weight as a covariate, the two groups showed a trend towards a statistically significant difference on Global Severity at posttest ($F_{[1,37]} = 3.29$, $p = .08$) and on Bulimic Severity at posttest ($F_{[1,37]} = 2.82$, $p = .10$). Although the analysis of covariance procedures did not reach statistical significance on the Global Severity Index and on the Bulimic Severity Index at posttest, effect size calculations suggest important differences between the two groups at posttest. The mean treatment effect size was high ($ES = .76$) for Global Severity, and moderately high ($ES = .64$) for Bulimic Severity.

The assumptions for MANOVA were not met for the Clinician’s rating scale at posttest (Box’s $M = 191.34$, $F$
Bartlett’s test of sphericity also indicated that the variables were not independent (124.09 with 45 df, $p < .001$). MANOVA results indicated that the two groups were statistically significantly different at posttest on the Clinician Rating Scale as a whole (Wilks Lambda $F[10,28] = 2.18$, $p = .05$) when weight was controlled for in the analysis. The omega squared multivariate effect size showed a moderate to high treatment effect (.44).

Further analysis of each of the subscales revealed important differences between the two groups. Mean treatment effect sizes were also calculated for each of the subscales of the Clinician Rating Scale, and are presented in Table 13. As shown, the mean treatment effect sizes ranged from low (ES = .13) to high (ES = .89) for each of the subscale scores. The largest mean treatment effect size was on the rating pertaining to "feeling fat" on these subscales.

Posttest analyses of the Anorexia Bulimia Inventory incorporated the pretest Purging subscale as an additional covariate. Tests of the underlying assumptions MANOVA revealed that all subscales of the ABI except Binging met the condition of homogeneity of variance at posttest. The Exercise, Maladaptive Cognitions, and Parent Conflict subscales were the only ones that were normally distributed.
at posttest. The multivariate test for homogeneity of dispersion matrices, however, was adequate for the combined subscales of the ABI (Box’s M = 78.81, $F_{[45,4743]} = 1.30, \ p = .09$). Bartlett’s test of sphericity also indicated that the variables were not independent ($153.00 \text{ with } 36 \text{ df}, \ p < .001$). The two groups were not significantly different at posttest on the combined ABI with Weight used as a covariate (Wilks Lambda $F_{[9,28]} = 1.34, \ p = .26$). The omega squared multivariate effect size was moderate (.32). Thus, although statistical significance testing suggests that the two groups were not significantly different from each other at posttest on this measure of eating-disorder symptomatology and concomitant symptoms, the effect size calculation suggests a moderate treatment effect.

To determine whether the treatment was effective for reducing any of the subscale scores of the ABI, mean treatment effect sizes were calculated. Mean effect sizes for the subscales of the ABI at posttest ranged from low ($ES = .05$) to high ($ES = .83$), with the greatest treatment effects for concomitant symptoms of eating disorders showing in the Depressed Mood subscale of the ABI (see Table 13).
The results of this study showed that in a sample of women with subclinical bulimia nervosa, Cash's (1991) self-administered audio-taped treatment program effectively decreased body image dissatisfaction. In addition, Cash's (1991) treatment protocol effectively ameliorated eating-disordered symptomatology. Results associated with each objective of the study will be successively discussed below, followed by a more general discussion of the findings, implications of the results, and directions for further research in this area.

Body Image Dissatisfaction

The main objective of the study was to determine whether use of Cash's (1991) standardized audio-taped cognitive behavioral treatment package administered in a self-directed manner resulted in positive alterations of body image dissatisfaction to a greater degree than a waiting-list control condition. Statistical significance testing indicated that the participants in the study improved on two of three measures of body image dissatisfaction, relative to a waiting-list control group. Standardized mean treatment effect-size calculations indicated that the treated subjects had moderate to high
treatment effects compared to control group subjects. The findings for each measure will be considered below.

Statistical significance testing did not indicate that the treatment and control groups differed at posttest on the overall Body Area Satisfaction Scale. However, results were in the desired direction, and the effect size for this measure was fairly high (.75). Thus, treated subjects appear to have improved on this measure relative to control group subjects at posttest. The Body Area Satisfaction Scale can be thought of as a fairly global measure of overall satisfaction with one's body. Indeed, the score on this scale incorporated an average of nine body part ratings for each subject. Examination of the means for each BASS item indicated that the treatment subjects improved from "mostly dissatisfied" to "neither satisfied nor dissatisfied" on most of the body parts they rated, and to "mostly satisfied" on others. Given the small sample size in this study and the small number of items on this measure, the amount of change represented by the mean difference effect size may be a better measure of overall change in satisfaction ratings than statistical significance testing may indicate. Certainly, the treated subjects improved to some degree relative to the control group.

On the Body Esteem Scale, treatment subjects improved on all three subscales relative to the waiting list control
group. The treatment group subjects rated themselves as having more positive feelings about: (a) their facial features and sexual parts of their bodies (Sexual Attractiveness), (b) their body parts and functions that women see as related to control of food intake (Weight Concern), and (c) their overall strength and stamina (Physical Conditioning). Mean difference treatment effect sizes were in the moderate to very high range, which indicates substantial improvement for the treated subjects relative to the control group subjects.

Interestingly, prior to treatment, subjects in the experimental condition scored even lower than women with anorexia nervosa in a previous study on all three subscales (Franzoi & Shields, 1984). At posttest, the treated subjects in this study scored higher (more positively) than anorexic women, and in a manner more similar to noneating-disordered college women on all but the Weight Concern subscale. The scores for subjects in the waiting-list control group remained similar to the scores for a previous sample of anorexic women. Thus, the treatment protocol used in this study appears to help women change their overall body esteem from indices in the "clinical" range, to a more normal range. However, this improvement was not as great for the Weight Concern subscale, which may indicate that
further treatment is necessary to address specific concerns related to bulimia nervosa symptomatology.

The third body image dissatisfaction measure, the Body Shape Questionnaire, is designed to assess specific circumstances that provoke feeling fat, and to assess the behavioral and emotional consequences of such feelings. Thus, this measure appears to tap into more of the consequences of body image dissatisfaction than the other two body image dissatisfaction measures. Treatment lowered subjects' scores on this measure, which assesses concern about body shape. The treatment effect-size calculation was also high. In the original normative study for this measure (Cooper et al., 1987), the mean score for women with "definite cases" of bulimia nervosa was 136.9, while the mean for "probable cases" was 129.3, and the mean score for "definite noncases" was 71.9. In this study, subjects in both the experimental and control groups scored above the mean for probable cases of bulimia nervosa and below the mean for definite cases in the original study. After treatment, the control group scores remained in this range, and the treatment group scores dropped to a mean of 111.45, which is below the mean of probable cases in the original normative study. Hence, for this measure as well, the treated subjects score less like eating-disordered women at posttest.
In summary, it appears that Cash's (1991) standardized treatment protocol was successful in improving body image dissatisfaction in a sample of subclinical bulimic women. The results of statistical significance testing were consistent across two different measures of body image satisfaction and shape concern, and a strong trend for improvement was found using a third measure. For all three measures, mean effect sizes were substantial. Thus, it appears that Cash's (1991) treatment package is effective, when administered in a self-directed manner.

**Eating-Disorder Symptomatology and Concomitant Symptoms**

The second objective of this study was to test whether Cash's (1991) standardized cognitive behavioral treatment package for improving body image has an impact on eating-disorder symptomatology such as binging and purging, and concomitant symptoms such as depression and anxiety. The statistical significance testing results of this study showed less support for these objectives than the previous objective. However, calculation of standardized mean difference effect sizes and multivariate effect sizes revealed important differences between the treatment and control groups at posttest. A discussion of the results, by measure, follows below.
On the Clinician Rating Scale, the treatment group did not change relative to the control group on bulimic severity or global severity at posttest when statistical significance testing was employed. However, the effect sizes for these measures were high (.76 and .64, respectively). In addition, although some of the assumptions required for multivariate analysis were not met, MANOVA of the combined dependent variables on the Clinician Rating Scale showed that the two groups differed following treatment. Furthermore, the estimated multivariate effect size for the combined dependent variables on this measure was high (.45). Thus, although the sample was too small to find statistically significant results, the overall treatment effect appears to be substantial. Hence, it appears that Cash’s (1991) treatment protocol for improving body image dissatisfaction also has a positive impact on eating-disorder symptomatology when measured by interview and the Clinician’s Rating Scale.

On the self-report measure of eating symptomatology and concomitant symptoms (The Anorexia Bulimia Inventory), the results were mixed. In line with expectations, the mean scores on all subscales for all subjects at pretest suggested that the women in this sample scored higher than a sample of college women, but somewhat lower than a sample of women with true bulimia nervosa (Stein, 1992). At posttest,
the women in the treatment group scored more similarly to normal college women, and less like women with bulimia nervosa, relative to the normative sample (Stein, 1992). In the present investigation, the underlying assumptions for multivariate analyses were not met, and the results indicated that the two groups did not differ following treatment on the combined ABI subscales.

Although statistical significance testing did not reveal that the groups differed at posttest on the ABI, the standardized mean difference effect sizes on the ABI subscales and the multivariate effect size were primarily in the moderate to high range at posttest. This indicates that treated subjects did improve somewhat on this measure of eating symptomatology and concomitant symptoms relative to control group subjects. Thus, the results of effect size calculations suggest that, when measured by the ABI, Cash's (1991) treatment package was somewhat effective for ameliorating specific and circumscribed eating symptoms in a sample of women with subclinical bulimia nervosa.

**Limitations of the Current Study**

The results of the current study are promising, but somewhat puzzling. Statistical significance testing revealed that the treatment protocol was effective in terms of improving body image dissatisfaction, as measured by two of three measures, and not as effective for reducing eating-
disorder symptomatology. Because statistical significance testing is dependent on sample size, one reason for the lack of statistically significant results in this investigation may be the small sample size used. However, overall standardized mean difference effect sizes (which are not dependent on sample size) for all body image dissatisfaction measures, and for both eating symptomatology measures were in the moderate to high range. Therefore, although statistical significance testing did not reveal all of the important differences between groups at posttest, effect size calculations did indicate moderate to high treatment effects for all measures.

In addition to the above problem with statistical significance testing in a sample of this size, another problem arose in terms of the comparability of the two groups and the use of covariance procedures. Ideally, in experimental research, random assignment of subjects to groups should result in comparability of the groups prior to treatment. In this investigation, the two groups were not comparable at pretreatment, as they differed on age, weight, and purging. Covariance procedures were used at posttest in an attempt to statistically control for the differences on the pretreatment measures. However, some authors, (e.g., Loftin & Madison, 1991) have argued that this procedure should not be employed because taking out the variance
associated with the covariate may render the results meaningless. Thus, in this study, for example, one could argue that using weight as a covariate removes meaning from the posttest analysis, and that the procedure should not have been used. In other words, analysis of covariance at posttest may not adequately correct for noncomparability of groups at pretest.

Further, the sample for this study consisted primarily of college women with one or more key symptoms of bulimia nervosa. Most did not evidence a full bulimia nervosa syndrome. Specifically, the subjects for the study were required to meet the minimum criteria in terms of the number of bulimic symptoms they exhibited, but no upper limit was placed on the number of symptoms they could exhibit. Most of the women did not meet the criteria for a diagnosis of bulimia nervosa. Hence, it remains unclear whether this treatment package is effective for women with more severe symptoms of bulimia nervosa. Further research needs to be conducted to determine whether this treatment package is effective for women with a formal diagnosis of bulimia nervosa, and whether accessory symptoms, such as depression and anxiety, impede or facilitate treatment.

It is noteworthy that the control group tended to improve on all measures over time. The reasons for this improvement are not clear. The subjects may have improved
merely as a result of participating in the assessment session and the initial structured interview. Or subjects may have improved simply as a result of test reactivity, or taking the test a second time. This possibility has been explored in other studies (Huon & Brown, 1985; Wolchik et al., 1986), and the effects of assessment were not evaluated in this study. Subjects improved on both self-report and interview measures of eating symptomatology. The changes on the Clinician Rating Scale from pretreatment to post-treatment may be due to subjects' reporting of fewer or less severe eating symptoms due to social embarrassment during the interview. One would expect the self-report measures to have less social desirability associated with them than the interviews would have.

However, the change on the Clinician Rating Scale may also be due to interviewer bias. Although the interviewer was blind to the treatment condition of each subject, the interviewer was not blind to the fact that the subject was being interviewed for a second time at posttest. The interviewer may have rated the subject as less severe at posttest due to a bias toward looking for improvements in all subjects. Thus, control group subjects may have improved on this measure.

One limitation to the generalizability of the results of this study is that 27 of the subjects who were initially
screened and found to be appropriate for the study dropped out prematurely. This represents an overall attrition rate of 41%, with 55% attrition in the treatment group and 33% attrition in the control group. Thus, the subjects who dropped out were not evenly distributed between the treatment and control groups. And, their reasons for dropping out may have differed. Several of the control group members dropped out due to not wanting to wait 8 weeks before they could begin treatment, and many more dropped out when the academic quarter ended, because of increasing demands on their time. Further, in the treatment group, some of the subjects dropped out to seek other treatment. It remains unclear whether the dropouts in the groups were fully comparable in terms of their bulimic symptoms or other characteristics.

Most of the subjects in the treatment group who dropped out did so after the fourth session. Although no formal data were collected, several of the dropouts in the treatment group were called to explore their reasons for leaving and to attempt to encourage them to continue treatment. Those subjects who dropped out reported that they had difficulty with the systematic body image desensitization exercise on Tape #4. They reported that they had difficulty sustaining enough attention to complete the exercise. Some reported that they had difficulty
listening to a male voice on the tape during the systematic desensitization exercise because they did not feel a male could understand their degree of anxiety in the body image hierarchy situations. Subjects who did complete treatment were asked, following their structured interview, what they liked and did not like about the treatment package. Universally, the subjects reported that they had difficulty with Tape #4. However, some of the treatment subjects obviously stayed in treatment despite this difficulty, while some dropped out of treatment.

Finally, the long-term effectiveness of this treatment package was not assessed in this study. Subjects in the waiting-list control group and the treatment group were assessed at the beginning of treatment and after 8 weeks. Any gains made in treatment were evident immediately posttreatment. However, it remains unclear whether those gains will be maintained over time. Bulimia nervosa typically has a long and varied course, with disturbed eating behavior persisting for several years for many women (APA, 1994). Body image dissatisfaction has been associated with relapse (Freeman et al., 1985) for bulimic women, but the reverse phenomenon has not been empirically established. That is, improvements in body image dissatisfaction have not necessarily been associated with long-term recovery from bulimia nervosa. Further research in this area should
address the long-term effectiveness of the body image dissatisfaction treatment.

Implications and Directions for Further Research

Despite the above limitations, this study has important implications for further treatment and research in this area. One strength of the treatment package is that it can be effectively utilized in a self-directed manner to improve body image dissatisfaction in a sample of women with subclinical bulimia nervosa. This is consistent with reviews of self-administered treatments (i.e., Scogin et al., 1990) that suggest that self-administered treatment is effective for subclinical or nonclinical levels of problems. Cash (1991), in the materials sold with the tapes, has suggested that the tapes be used with the assistance of a professional. However, the treatment package is marketed widely and can be purchased by lay persons. Given that anyone can purchase this package, it is helpful to know that the tapes appear to improve body image dissatisfaction when used in a self-directed manner, in a sample of women with subclinical bulimia nervosa. Thus, their continued use without therapist assistance is warranted for women with mild bulimic symptoms who self-refer to treatment. However, the effectiveness of this treatment package for more severe cases of bulimia nervosa remains unclear. Therefore,
clinicians need to exercise caution when recommending the use of this treatment package as a sole treatment for bulimia nervosa.

In addition, the author of the treatment materials does not suggest that the tapes address or improve eating symptomatology per se, or the concomitant symptoms that were the focus of this study. Yet, these also improved somewhat for the subjects in this study. The fact that they did not improve markedly is not a reflection on the treatment materials, since the program was not designed to address these symptoms. However, the fact that eating symptoms did improve somewhat is remarkable, given the brief nature of the treatment. This may have important theoretical implications. If eating-disordered behavior and symptoms can be lessened by improving body image dissatisfaction, then perhaps body image dissatisfaction is a factor in maintaining eating-disordered behavior. Improvement in body image dissatisfaction may result in improvements in eating-disordered behavior. Clearly, body image treatment does not worsen eating symptomatology for subclinical bulimic women, and it may help. Certainly more research needs to be done to assess the theoretical implications for this type of treatment.

In terms of research advances, the results of this study replicate the results of a pilot study conducted prior
to mass production of these treatment materials (Butters & Cash, 1987). It appears that Cash (1991) successfully standardized the treatment protocol used in the prior study. The treatment outcome research for cognitive behavioral treatment programs is fraught with problems in terms of adequately conveying what is actually done in treatment. The standardization of this protocol is one step toward a clearer understanding of what occurs during this type of treatment. In addition, the outcome research to date in eating disorders may have been impeded by therapist variables. Use of a protocol devoid of therapist assistance removes all confounds due to therapists' skill level, gender, and other factors. While the instructions appear to be difficult for subjects to follow at times, the use of published treatment materials facilitates greater understanding of the procedures used in the treatment. Other researchers should follow Cash's (1991) lead in developing standardized treatment materials.

Another key aspect of the present investigation is that the outcome measure used focused on a variety of symptoms, including eating behaviors as well as concomitant symptoms. Most studies that have been conducted with eating disorders have primarily used a percentage decrease in vomiting following treatment as the outcome measure. For this sample of subclinical bulimic women, vomiting was not one of the
major symptoms exhibited. Other disordered eating symptoms such as dieting, fasting, and binge eating were reported by the subjects as being as troublesome to them as vomiting. Clearly there are many other facets of the eating disorder, and all need to be studied in future treatment outcome research.

Some studies of treatment of body image dissatisfaction in college women have reported success in terms of improvement of body image dissatisfaction (Rosen et al., 1990), and have reported concomitant changes in eating symptomatology. Other outcome studies for treatment of eating symptomatology have reported changes in body image dissatisfaction as a result of traditional cognitive behavioral treatment focused on the eating disorder. However, the present study is the first to specifically examine whether eating symptoms could be changed without specifically focusing on them, and by focusing on treating the underlying body image dissatisfaction. The results suggest that disordered eating may change at least somewhat with treatment for body image dissatisfaction. This finding may be important for developing effective treatments for people with subclinical bulimia nervosa.

The treatment period for this study was relatively brief, and was relatively effective. Women in the beginning stages of an eating disorder often present for treatment at
college counseling centers. This treatment package may be an effective place to begin treatment for such women. Instead of being placed on a waiting list, the women seeking treatment for bulimic symptoms could start the audio-taped treatment package. Not only may they gain greater satisfaction with their body image, but they may improve their bulimic symptoms as well. In addition to helping women who might otherwise be placed on a waiting list, this treatment package could also be used in a stepped care approach. Women with bulimic symptoms could use this treatment package as an adjunct to more traditional forms of treatment, which may speed up treatment and cost less in the long run.

Finally, although this treatment package appears to be effective for decreasing body image dissatisfaction, the key ingredients that facilitate change are not known. The overall package works, but it may be that only a subgroup of the tapes is critical for changes in body image dissatisfaction. Several of the subjects reported that they felt good about doing something to address their concerns. Others reported that they enjoyed the privacy available with the audio-taped treatment package, and said they did not think they could go to a therapist to discuss body image issues. Additional subjects reported that they felt the relaxation exercises were helpful in reducing overall stress
and increasing feelings of well being. Overall, it remains unclear which components of the treatment package are necessary for change, and which are sufficient to bring about change. Further research should focus on dismantling the treatment package and testing the efficacy of each component.
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116


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APPENDIXES
Appendix A

Advertisements Used for Recruitment of Subjects

Two different types of advertisements were used for recruitment of subjects for this study. The first three were printed on flyers and posted around the university campus. The next two versions were placed in the campus and the community newspapers.

**BODY IMAGE DISSATISFACTION**

Females needed to participate in research, preferably those who have or have had eating disorders (anorexia and/or bulimia nervosa). The research is about changing your body image, and is **FREE**.

Those interested, please leave a message for Ellen in the USU Counseling Center at 797-1012.

**DO YOU DREAD WEARING SHORTS?**

Females needed to participate in research, preferably those who have or have had eating disorders (anorexia and/or bulimia nervosa). The research is about changing your body image, and is **FREE**.

Those interested, please leave a message for Ellen in the USU Counseling Center at 797-1012.

**ARE YOU ON A DIET?**

Females needed to participate in research, preferably those who have or have had eating disorders (anorexia and/or bulimia nervosa). The research is about changing your body image, and is **FREE**.

Those interested, please leave a message for Ellen in the USU Counseling Center at 797-1012.

**ARE YOU DISSATISFIED WITH YOUR BODY IMAGE? FREE HELP IS AVAILABLE**

Individual audio-taped treatment is available for women with a history of dieting who would like to change their body image. Come and participate in a research study focusing on changing body image. It’s free and takes about one hour per week for eight weeks. Call Jennifer at 750-3401 or Ellen at 750-1012 and leave a message.

Individual treatment for women with eating disorders is available through the USU Counseling Center. Women who are experiencing body image dissatisfaction are encouraged to call for further information on an individualized audio taped treatment for improving body image. Please call Ellen at 750-1012.
Appendix B

Body Area Satisfaction Scale

Use this 1-5 scale to indicate how satisfied you are with each of the following areas of your body:

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Dissatisfied</td>
<td>Mostly Dissatisfied</td>
<td>Neither Satisfied nor Satisfied</td>
<td>Mostly Satisfied</td>
<td>Very Satisfied</td>
</tr>
</tbody>
</table>

Dissatisfied

| 1. Face (facial features, complexion) |
| 2. Hair (color, thickness, texture) |
| 3. Lower torso (buttocks, hips, thighs, legs) |
| 4. Mid torso (waist, stomach) |
| 5. Upper torso (chest or breasts, shoulders, arms) |
| 6. Muscle tone |
| 7. Weight |
| 8. Height |
| 9. Overall appearance |
| 10. Any other disliked aspect/features of your body: Specify: |
| Specify: |
| Specify: |
Appendix C

Body Esteem Scale

Instructions: On this page are listed a number of body parts and functions. Please read each item and indicate how you feel about this part or function of your own body using the following scale:

1 = Have strong negative feelings
2 = Have moderate negative feelings
3 = Have no feeling one way or the other
4 = Have moderate positive feelings
5 = Have strong positive feelings

1. body scent ___
2. appetite ___
3. nose ___
4. physical stamina ___
5. reflexes ___
6. lips ___
7. muscular strength ___
8. waist ___
9. energy level ___
10. thighs ___
11. ears ___
12. biceps ___
13. chin ___
14. body build ___
15. physical coordination ___
16. buttocks ___
17. agility ___
18. width of shoulders ___
19. arms ___
20. chest or breasts ___
21. appearance of eyes ___
22. cheeks/cheekbones ___
23. hips ___
24. legs ___
25. figure ___
26. sex drive ___
27. feet ___
28. sex organs ___
29. appearance of stomach ___
30. health ___
31. sex activities ___
32. body hair ___
33. physical condition ___
34. face ___
35. weight ___
Appendix D

Body Shape Questionnaire

We would like to know how you have been feeling about your appearance over the PAST FOUR WEEKS. Please read each question and circle the appropriate number to the right. Please answer all of the questions. OVER THE PAST FOUR WEEKS:

1. Has feeling bored made you brood about your shape?

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

2. Have you been so worried about your shape that you have been feeling that you ought to diet?

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

3. Have you thought that your thighs, hips, or bottom are too large for the rest of you?

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

4. Have you been afraid that you might become fat (or fatter)?

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

5. Have you worried about your flesh not being firm enough?

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

6. Has feeling full (e.g. after eating a large meal) made you feel fat?

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

7. Have you felt so bad about your shape that you have cried?

Very
Never Rarely Sometimes Often Often Always
1 2 3 4 5 6
8. Have you avoided running because your flesh might wobble?  
   Very  
   Never Rarely Sometimes Often Often Always  
   1  2  3  4  5  6  

9. Has being with thin women made you feel self-conscious about your shape?  
   Very  
   Never Rarely Sometimes Often Often Always  
   1  2  3  4  5  6  

10. Have you worried about your thighs spreading out when sitting down?  
    Very  
    Never Rarely Sometimes Often Often Always  
    1  2  3  4  5  6  

11. Has eating even a small amount of food made you feel fat?  
    Very  
    Never Rarely Sometimes Often Often Always  
    1  2  3  4  5  6  

12. Have you noticed the shape of other women and felt that your own shape compared unfavorably?  
    Very  
    Never Rarely Sometimes Often Often Always  
    1  2  3  4  5  6  

13. Has thinking about your shape interfered with your ability to concentrate (e.g., while watching television, reading, listening to conversations)?  
    Very  
    Never Rarely Sometimes Often Often Always  
    1  2  3  4  5  6  

14. Has being naked, such as when taking a bath, made you feel fat?  
    Very  
    Never Rarely Sometimes Often Often Always  
    1  2  3  4  5  6  

15. Have you avoided wearing clothes which make you particularly aware of the shape of your body?  
    Very  
    Never Rarely Sometimes Often Often Always  
    1  2  3  4  5  6
16. Have you imagined cutting off fleshy areas of your body?

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

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

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

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

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

19. Have you felt excessively large and rounded?

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

20. Have you felt ashamed of your body?

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

21. Has worry about your shape made you diet?

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

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

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

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

   Very
   Never Rarely Sometimes Often Often Always
   1 2 3 4 5 6
24. Have you worried about other people seeing rolls of flesh around your waist or stomach?

<table>
<thead>
<tr>
<th>Very</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Always</th>
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<tr>
<td>1 2 3 4 5 6</td>
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25. Have you felt that it is not fair that other women are thinner than you?

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<th>Very</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Always</th>
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<tbody>
<tr>
<td>1 2 3 4 5 6</td>
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26. Have you vomited in order to feel thinner?

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<tr>
<th>Very</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Always</th>
</tr>
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<tbody>
<tr>
<td>1 2 3 4 5 6</td>
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</table>

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

<table>
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<tr>
<th>Very</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Always</th>
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<tbody>
<tr>
<td>1 2 3 4 5 6</td>
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28. Have you worried about your flesh being dimply?

<table>
<thead>
<tr>
<th>Very</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Always</th>
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<tr>
<td>1 2 3 4 5 6</td>
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29. Has seeing your reflection (e.g., in a mirror or shop window) made you feel bad about your shape?

<table>
<thead>
<tr>
<th>Very</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Always</th>
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<tbody>
<tr>
<td>1 2 3 4 5 6</td>
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30. Have you pinched areas of your body to see how much fat there is?

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<thead>
<tr>
<th>Very</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
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</table>

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

<table>
<thead>
<tr>
<th>Very</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Always</th>
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<tbody>
<tr>
<td>1 2 3 4 5 6</td>
<td></td>
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</table>
32. Have you taken laxatives in order to feel thinner?

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<tr>
<th>Very</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Often</th>
<th>Always</th>
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</table>

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

<table>
<thead>
<tr>
<th>Very</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
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</table>

34. Has worry about your shape made you feel you ought to exercise?

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<th>Very</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
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Appendix E

Anorexia Bulimia Inventory

HEALTH AND DEVELOPMENT QUESTIONNAIRE (ABI91)

Rate each of the statements below on a scale from 1 to 4 as they describe how you feel, act, or believe at present. The rating should identify whether or not the statement generally describes you at the present time. Mark all of your answers on the BLUE ANSWER SHEET that has been provided. DO NOT mark on this questionnaire.

1 = I NEVER think, feel, or act this way.
2 = I RARELY think, feel, or act this way.
3 = I OFTEN think, feel, or act this way.
4 = I VERY OFTEN think, feel, or act this way.

01. My parents and I have mastered the art of honest communication in all areas.
02. My moods get so low that it is painful.
03. I think that a successful, respected woman would not be fat.
04. (Leave this item BLANK if your periods have not started yet.) In the last year, I've missed more than 2 menstrual periods.
05. I feel full of energy.
06. I often found myself in the middle of my parent's arguments.
07. I try to get things done, but I feel too slow or sluggish.
08. When I throw-up, I feel less nervous about gaining weight afterwards.
09. Lately, I feel unusually tired.
10. I feel very nervous when something gets in the way of my exercise schedule.
11. I have sudden changes in my mood.
12. If I eat a sweet roll, my body will likely turn it into fat.
13. I have periods of sadness that last for days.
14. I think that any person aware of fitness will always exercise with great energy.
15. I feel hollow and empty inside.
16. Certain thoughts really bother me because they repeat in my mind over and over again.
17. I feel worn out.
18. Within the last month or so, I've thought about suicide.
20. Anyone can be overweight, but it takes someone special to be thin.
21. Even when I do something well, I still don’t feel very worthwhile.
22. I go back and forth between trying to diet, and suddenly eating more snacks than most people eat in several days.

CHECK YOU ANSWER SHEET. YOU SHOULD HAVE JUST MARKED ITEM #22.

1 = I NEVER think, feel, or act this way.
2 = I RARELY think, feel, or act this way.
3 = I OFTEN think, feel, or act this way.
4 = I VERY OFTEN think, feel, or act this way.

23. My muscles seem to lack energy.
24. The food I eat is rapidly turned into fat.
25. Being overweight is a sign of serious weakness in one’s personality.
26. I probably please my parents far more than I disappoint them.
27. I wake up a lot during the night, and toss and turn when I sleep.
28. My worries keep me from getting other things done.
29. I feel like giving up.
30. Lately, it takes extra effort to get myself started doing things.
31. Weekends and holidays should be like any other day to a person who is serious about regular exercise and fitness.
32. For no real reason, my heart will pound or race, and I will feel on edge.
33. People who are overweight risk rejection by loved ones.
34. I wish I felt more lively and energetic.
35. Others tend to be too worried about my health.
36. When I need to concentrate, my mind seems to wander.
37. Thin people are much happier than overweight people.
38. I would like to weigh myself several times a day.
39. My parents told me that things were O.K., even when I really sensed they were not.
40. (Leave this item BLANK if you have not started your periods yet.) My menstrual periods are very regular.
41. It is/was nearly impossible to change my parents’ mind about something.
42. If I eat too much, I just can’t hold it down.
43. Butterflies or jitters in the stomach are with me much of the day.

44. I have eating sprees where I suddenly eat as much food as most people eat during a period of two days.

45. Even though I've carefully checked my work, I continue to feel the urge to recheck it again.

46. Others would prefer if I ate more.

47. Medicine that gives me diarrhea is a regular part of my diet.

48. Most of the time, it is/was useless to try to get my way at home.

CHECK YOUR ANSWER SHEET. YOU SHOULD HAVE JUST MARKED ITEM #48.

1 = I NEVER think, feel, or act this way.
2 = I RARELY think, feel, or act this way.
3 = I OFTEN think, feel, or act this way.
4 = I VERY OFTEN think, feel, or act this way.

49. At least twice a week, I start an eating spree and can't stop until my stomach hurts terrible.

50. The activities that usually bring me joy don't make me happy these days.

51. If I gain two more pounds, I won't be able to comfortably wear a swimsuit.

52. By the middle of the day, I am so fatigued that I have a hard time finishing my work.

53. Others say my weight is too low, but certain areas of my body still feel very fat.

54. If I fail in my diet, I must be a weak person.

55. It takes a lot of time to unwind or relax.

56. I take diet pills to help me lose weight.

57. When I wear loose-fitting clothes, others are less likely to lecture me to stop dieting.

58. I have frequent diarrhea.

59. While most women are concerned about their body shape, I am unusually worried about mine.

60. I think about all the calories I will burn up when I exercise.

61. I wish my nerves would calm down.

62. I feel restless if I am unable to be active after eating a meal.

63. I would say that being able to really get close to someone you like has a lot to do with being as think and attractive as possible.
64. Throwing-up is a convenient way for me to avoid too many calories.
65. I feel especially guilty about my weaknesses and failures these days.
66. My friends say I am too thin; however, I really feel quite fat.
67. In public, I eat sensibly; but when alone, I will quickly eat enough food to satisfy 3-4 people.
68. Other people seem less sad than me.
69. The more I struggle to keep my weight down, the more I seem to have eating sprees.
70. I have to fight to convince people that I don’t need as much food as others to be healthy.
71. I feel nervous inside every day.
72. I have attacks of anxiety where I feel something terrible may happen.
73. Conflicts arise at home that never get talked about.
74. I wonder if the things I worry about would seem silly to other people.
75. I rarely take the time to exercise to lose weight.
Appendix F

Clinician Rating Scale

Clinician's DSM-III-R Interview Rating Scale

Patient Research I.D. _____ Rater's Initials _____

In rating the severity or frequency of each symptom below, rely on your subjective experience, using as your frame of reference, a typical patient in this treatment program who apparently has the same disorder (e.g., bulimia, or anorexia nervosa). The typical or usual patient should be assigned a rating of "3" on a symptom. Leave an item blank if it does not apply to the patient because of age or gender. When a symptom is not present, rate it a "1." The system of rating is as follows:

1 = Severity or frequency of symptom is extremely low; or symptom is not present.
2 = Severity or frequency of symptom is below the norm for treatment group.
3 = Severity or frequency of symptom is typical of patients with this disorder, in this program.
4 = Severity or frequency of symptom is somewhat above the norm for the treatment program.
5 = Severity or frequency of symptom is extreme or unusually high for treatment program.

Rating

DSM-III-R Criterion

A. Intense fear of becoming obese, even when underweight.

B. Disturbance in the way in which one's body weight, size or shape is experienced:
   - e.g., claiming to feel fat even when emaciated.
   - belief that one area of the body is "too fat" even when obviously underweight.

C. Refusal to maintain body weight over a minimal normal weight for age and height:
   - weight loss leading to maintenance of body weight 15% below expected;
   - failure to make expected weight gain during period of growth, leading to body weight 15% below expected.

D. In females, absence of at least three consecutive menstrual cycles when otherwise expected to occur (primary or secondary amenorrhea). List the number missed in past 6 months
   (Rating: 0 missed = 1, 1 missed = 2, 2-3 missed = 3, 4-5 missed = 4, 6 missed = 5)

E. Recurrent episodes of binge eating (rapid consumption of a large amount of food in a discrete period of time, usually less than two hours). List the average number of binges during the past month. (0-2 episodes = 1, 3-5 episodes = 2, 6-8 episodes = 3, 9-12 episodes = 4, > 12 episodes = 5).
F. During the eating binges there is a feeling of lack of control over the eating behavior.

G. In order to counteract the effects of binge eating, the individual regularly engages in:

- self-induced vomiting. List the average number in last month (rating: less than monthly or never = 1, 1-4/month = 2, 5-9/month = 3, 10-15/month = 4, > 15/month = 5).

- use of laxatives or diuretics, diet pills. Rate highest frequency in last month of any one item (rating: less than monthly or never = 1, 1-4/month = 2, 5-9/month = 3, 10-15/month = 4, > 15/month = 5).

- rigorous dieting or fasting. Rate frequency of 12 to 24 hour fasts in last month (rating: less than monthly or never = 1; 1-4/month = 2; 5-9/month = 3; 10-15/month = 4; > 15/month = 5).

- Rate frequency of vigorous exercise during past month (rating: less than monthly or never = 1; 1-8/month = 2; 9-16/month = 3; 17-24/month = 4; > 24/month = 5).

Please fill in patient’s current weight ____ Height ____ Body fat composition ____
Appendix G

Interview

************************************************************************

Anorexia Nervosa
1. The majority of women have
been on various diet programs.
Do you ever diet?
If YES:
Tell me about some of the ways
of losing weight you have
tried (skipping meals; fasting
for 24 hours or more;
exercise; how much, how
often?).

What is the most weight you
have ever lost?

(What weight did you start out
at? How tall were you then?
What was your weight goal
then? What was the weight you
finally got down to?)

Are you trying right now to
lose weight? (What weight did
you start out at? What is
your weight goal right now?
How long have you been working
on the current weight goal?)

How tall are you?

Do you ever find that you tend
to regain the weight you have
worked hard to lose?

2. Have you ever argued with
anyone, because they were
trying to convince you that
you needed to eat more and
gain weight?

3. Has anyone ever threatened to
take you to the doctor or a
treatment program because they
were worried that your weight
was too low?

*NOTE: If the person answers "NO"
to #2 or #3 above, skip to the
NEXT page and begin again at
"***********".
If "YES" to either #2 or #3 above,
ask the following in PRESENT TENSE
if the person may currently be
anorexic (based on responses or
appearance); otherwise, use past
tense:

When did this disagreement over
your weight happen? (Has this
been quite recent?)
Criteria:

A. Refusal to maintain body weight over a minimal normal weight for age and height e.g., weight loss leading to maintenance of body weight 15% below that expected; or failure to make expected weight gain during period of growth, leading to body weight 15% below that expected.

Did (do) you ever feel that others were (are) a bit jealous of the success you had with dieting?

(Did/do you feel that losing weight is something you are quite good at, compared to most other people?)

Tell me how much you weigh(ed) (at the time people were most concerned about your weight).

What was the lowest weight you reached (during the period when others were trying to get you to gain weight)?

When people are/were trying to talk you into gaining weight, did you basically ignore them and quietly go on with your diet, losing weight as you saw fit?

(WOMEN ONLY) When you were dieting and people felt you were too thin, did your periods ever become irregular or stop altogether for a few months in a row?

If YES; how many months did you skip in a row? (How irregular did they get?) Were you pregnant at the time? Have you usually been more regular, when you weren't dieting or losing weight? (Have your periods ever started?)

******************************************************************************

Do you ever have the sensation of feeling fat, even though friends or relatives say you aren't fat at all?

If YES: Tell me more about what they say, and how you try to judge how fat you are.

Do you ever feel that particular areas of your body are fat, and that you should diet to deal with these fat areas?

Many women are concerned about their weight and body shape, while others are not.

How do you feel about your body shape?

Have you found that worrying about your weight distracts you from doing other things?
D. In females, absence of at least three consecutive menstrual cycles when otherwise expected to occur (primary or secondary amenorrhea). (A woman is considered to have amenorrhea if her periods occur only following hormone, e.g., estrogen administration.)

C. Disturbance in the way in which one's body weight, size or shape is experienced, e.g., the person claims to "feel fat" even when emaciated, believes that one area of the body is "too fat" even when obviously underweight.
Do your worries interfere with your daily routines or activities?

Are you fearful of gaining weight?

If YES: On a scale running from 1 to 10, where 1 is no fear at all, and 10 is being absolutely terrified with fear, what number represents(ed) your fear of getting fat?

B. Intense fear of gaining weight or becoming fat, even though underweight.
Bulimia Nervosa

A survey of women found that a number experience "eating sprees" in which they ate large amounts of food in a relatively short amount of time.

Do you ever have the experience of suddenly consuming enough food to satisfy the hunger of several people?

Do you ever go on eating binges; that is, eating a great deal more food that you had intended, in a short period of time?

If "NO" to both of the above, find: "********" below and begin again.
If "YES" to either of these, continue with:

a) If you were to have an eating spree today, what kind of food would you eat, and how much? (Give me a listing of what you eat and how much of it you eat.)

b) What causes you to stop eating? (Sometimes people's thought or feelings help them to stop eating; for others, something happens--a room mate or spouse interrupts their eating binge. What happens in your situation?)

c) What is the most you have consumed during one of these sprees?

d) Do you find that you tend to have these binges at certain times of the day, more than other times?

e) I need to have some idea of how long it takes for you to go through an eating spree or binge, from start to finish. (Give me a specific example that you recall.)

f) On a scale from 1 to 10, where "1" is being totally in control, and "10" is completing without control, what number represents the amount of control you feel over your eating during an eating binge?
Criteria:

A. Recurrent episodes of binge eating (rapid consumption of a large amount of food in a discrete period of time).

B. A feeling of lack of control over eating behavior during the eating binges.

(Do you feel you could stop eating at any time you wanted, or do you feel like you are mechanically eating and can't easily stop?)

g) How many months have you had eating binges now; about how often do they occur in a typical week?

***************

From time to time, dieters experiment with a number of methods to lose weight. I want to list some common ways of losing weight for you. I'm interested in whether you have experimented with any of them...

INTERVIEWER NOTE: If subjects acknowledge one of the symptoms (a-e below), have subject elaborate as needed; HOW OFTEN, HOW MUCH, DETAILS OF AN EXAMPLE OF A SYMPTOM.

a. taking laxatives or diet pills?

b. skipping meals or going on fasts

c. cutting back on food for 24 hours or more

d. feeling that you want to throw up
   (If "YES": Do you ever throw up?)

e. exercise or trying to burn calories by exercise or physical activity

Do you worry very much about your weight?

If "NO", go to "**********" below
If "YES":

a) Would you say that you worry an extreme amount, a moderately high amount, a normal amount, or very little about your weight?

b) Do you feel that you worry too much during the day about your weight; or wish you weren't so worried about it?

c) Have you found that worrying about your weight distracts you from doing other things that you should be doing?
Does it interfere in the normal routine of your life?

D. A minimum average of two binge eating episodes a week for at least three months.

C. The person regularly engages in either self-induced vomiting, use of laxatives or diuretics, strict dieting, or vigorous exercise in order to prevent weight gain.

E. Persistent overconcern with body shape and weight.
How concerned are you about the shape of your body or the size of different parts of your body? Would you say you are concerned an extreme amount, a moderately high amount, a normal amount, or very little?

If YES: What is it about the shape of your body you especially dislike; what would you make your body more "ideal"; what would make you less worried about your weight?
Appendix H

Research Consent Form

I hereby give my consent to participate in research conducted by a doctoral student in the Psychology Department at Utah State University, and supervised by David M. Stein, Ph.D. I understand that the research will include a screening interview, completion of a few questionnaires, and one hour per week for eight weeks of listening to audio taped exercises focused on changing body image.

I understand that I will listen to the audio tapes at the USU Counseling Center in a private room where I will be undisturbed. I understand that all policies of confidentiality as explained in the USU Counseling Center Client Rights form will be followed. Furthermore, I understand that I may experience feelings of anxiety or discomfort as a result of being instructed to focus on my feelings about my body. However, no negative consequences are likely to result from this exercise. As a result of listening to these tapes I may experience greater awareness of thoughts and feelings about myself. I also understand I may benefit from these tapes by having increased feelings of satisfaction with my body and improved self-esteem.

I understand that all of the questionnaires that I complete will be identified by subject number rather than by my name. I understand that all data collected will be held in the strictest confidence in a locked office and locked file, and will be used only for the present research. I understand that I can talk to the doctoral student or her supervisor at any time about any questions I have regarding the research.

I further understand that I may withdraw from this study at any time without consequence, and that my participation is completely voluntary.

Signed By: ___________________________ Date: ________________
Address: ______________________________ Phone: ________________
Witnessed By: _________________________ Date: ________________
Appendix I
Demographic Information Sheet

AGE: __________

STUDENT STATUS:

___ Freshman
___ Sophomore
___ Junior
___ Senior
___ Graduate
___ Nonstudent

ETHNICITY:

___ Caucasian
___ African American
___ Native American
___ Hispanic
___ Asian American
___ International
     (Country: __________)

MARITAL STATUS:

___ Single
___ Divorced
___ Married

CHILDREN:

___ Yes
___ No
Appendix J
Treatment Protocol

Wait List Control Group:

Complete Self Report Measures
Screening Interview with reliability check

Assigned to waiting list, given date 8 weeks hence to come back.
Wait for seven weeks, return on week eight.
Complete posttest measures and interview.
Offered treatment.

Treatment Group:

Complete Self Report Measures
Screening Interview with reliability check

Week 1: Tape Side 1: Physical Appearance Inside and Out
Week 2: Tape Side 2: Discovering Reflections
Week 3: Tape Side 3: Learning Body and Mind Relaxation
Week 4: Tape Side 4: Body Image Desensitization
Week 5: Tape Side 5: Private Body Talk
Week 6: Tape Side 6: New Self-Reflections
Week 7: Tape Side 7: Better Body Image Behaviors
Week 8: Tape Side 8: Keeping Your Body Image Happier

Take Posttest measures, repeat clinical interview.
CURRICULUM VITAE

ELLEN N. EMERSON

EDUCATION

Ph.D. Professional- Scientific Psychology
Utah State University, Logan: 1995
Major Professor: David M. Stein, Ph.D.

M.A. Counseling Psychology
Michigan State University, East Lansing: 1985
Advisor: Norman Stewart, Ph.D.

B.A. Psychology
Advisors: Neil Lutsky, Ph.D. and
Steven Kozberg, Ph.D.

ACADEMIC AWARDS AND HONORS

1994 American Association of University Women Fellowship
Awarded by the Logan Branch of AAUW.

1994 Continuing Scholarship, Psychology Department, Utah
State University.

1994 Women and Gender Research Institute Research Grant, Utah
State University.

1993 Walter R. Borg Memorial Scholarship, Psychology
Department, Utah State University.

1993 Graduate Student Representative to the Psychology
Department, Utah State University.
1992  Pamela G. Cheney Scholarship, Utah State University.

1990  Special Recognition for Outstanding Service, Laurel Ridge Hospital, San Antonio, Texas.

1985  Graduate Fellowship, Michigan State University.

1984  Bachelor of Arts Degree with Distinction and cum laude honors, Carleton College.

1984  Nominated for honorary membership in Sigma Xi Research Society, Carleton College.

PROFESSIONAL EXPERIENCE

Clinical Experience

Present  Psychology Resident. The Medical College of Georgia Consortium. Full-time position in APA accredited Clinical Psychology Internship. Completing four 3-month rotations in outpatient psychiatry, inpatient psychiatry, behavioral medicine, and eating disorders.

1992 Consultant. Community Family Partnership Program, Center for Persons with Disabilities, Utah State University, Logan, Utah. Worked with family consultants training them in family systems theory and appropriate interventions and referrals for mental health services for low-income families in multi-disciplinary intervention program.

1991-1993 Mental Health Team Member. Utah Critical Incident Stress Debriefing Team, Utah. Led group debriefing exercises for emergency personnel experiencing undue job related stress following particularly stressful incidents.

1990-1992 Therapist. Utah State University Counseling Center, Logan, Utah. Provided individual, marital, and group therapy for college students experiencing a variety of emotional and behavioral problems. Co-led group therapy for clients with eating disorders and Adults Molested as Children. Completed intake interviews and psychodiagnostic assessments.

based on results of evaluation. Provided follow-up counseling for clients and their parents/families.

1991 Graduate Assistant. Utah State University Psychology Community Clinic, Logan, Utah. Performed comprehensive psychological evaluation and individual, marital, and family therapy for child, adolescent, and adult clients presenting with various emotional and behavioral problems.


1987-1990 Therapist. The Brown Schools, Laurel Ridge Hospital, San Antonio, Texas. Provided individual, family, group, and experiential therapy within a multi-disciplinary treatment team for children and adolescents in acute care and residential inpatient programs. Responsible for all therapy, psychosocial assessments, case management, and discharge planning for child and
adolescent patients. Group therapy with adult patients in acute care.

**1986-1987**

*Program Therapist/ Case Manager.* HCA Montevista Centre, Las Vegas, Nevada. Provided group, individual, and family therapy as part of multidisciplinary team for inpatient adolescents presenting with various emotional and behavioral problems. Responsible for case management, psychosocial assessments, treatment planning, substance abuse assessments, placement services, and aftercare groups.

*Group Facilitator -- Family Institute.* Nevada Bureau of Alcohol and Drug Abuse Summer School, Las Vegas and Reno, Nevada. Co-led groups in exercises and discussion on family issues in substance abuse. Participants were adolescent peer representatives from schools, treatment programs, and churches and adults in leadership positions in similar groups across the state.

**1985-1986**

*Counselor.* Bridge Counseling Associates. Las Vegas, Nevada. Provided individual, marriage, family, and group counseling for clients of all ages presenting with various emotional and behavioral difficulties.
1985-1986 **Counselor.** Parents United, Las Vegas, Nevada. Responsible for providing group counseling for teenage victims of sexual abuse.

1985 **Volunteer Counselor.** The Listening Ear, East Lansing, Michigan. Provided phone and face-to-face counseling in crisis center. Provided appropriate referrals to external agencies.

1985 **Counselor.** Family and Child Services, Lansing, Michigan. Provided individual and marriage counseling for clients of all ages presenting with various emotional and behavioral difficulties.

**Research Experience**

1992-1993 **Research Assistant.** Utah State University, Logan, Utah. Research grant titled: Generalizability Study of Anxiety and Depression in Public School Children. Implemented research design, including data collection, data coding and analysis, and write-up and presentation of results.

1991-1993 **Research Assistant.** Utah State University, Logan, Utah. Administered and scored 12 Rorschachs to subjects for research project titled, "Relationship between personal attitudes and cognitive perceptual problem solving."

Teaching and Administrative Experience

1994  Instructor. Psychology 632, Personality Assessment, Psychology Department, Utah State University, Logan, Utah. Co-taught assessment course for first year doctoral students in personality assessment, including use of MMPI-2, MCMI-2, and other commonly used instruments. Responsible for lecture, observing assessments, giving feedback on assessment batteries, and grading homework assignments and exams.

1993-1994  Teaching Assistant. Educational Psychology 366, Psychology Department, Utah State University, Logan, Utah. Taught undergraduate lab for educational psychology. Prepared and organized learning activities for the class, delivered and graded homework assignments and exams.

1993-1994  Administrative Practicum Placement. Utah State University Counseling Center, Logan, Utah. Designed and implemented a campus-wide peer counseling program, co-taught practicum for 3rd year psychology doctoral students, attended
clinical case staffings and administrative staff meetings.

1994 **Guest Lecturer.** Psychology 722 Group Therapy, Utah State University. Lectured on group therapy techniques for eating disorders.

1993 **Guest Lecturer.** Psychology 421 Personality Theories. Utah State University. Lectured on Freudian theory.


1992 **Instructor.** Psychology 421 Personality Theories, Utah State University. Planned and taught undergraduate course in personality. Duties included preparing and delivering lectures, preparing, and grading exams, and determining final course grades.

1992 **Guest Lecturer.** Family and Human Development 250, Gender Roles in American Society, Utah State University. Invited lecture on cultural and media influences on the development of eating disorders in women.

1991 **Instructor.** Psychology 366 Educational Psychology, Utah State University, Vernal, Utah, Tooele, Utah,
and Moab, Utah. Part-time position. Planned and taught undergraduate course in educational psychology course for 3 quarters. Duties included preparing and delivering lectures, preparing, giving, and grading exams, and determining final course grades.

1991 **Guest Lecturer.** Psychology 666, Learning Theories. Utah State University. Lectured on information processing models.


**PUBLICATIONS**

Crowley, S. L., & Emerson, E. N. (Under Review).


**PRESENTATIONS**


children with disabilities. Poster presented at the
Third Annual Child Health Psychology Meeting,
Gainesville, Florida, April 22.
Crowley, S., Emerson, E., & Smith, T. (1993). The
relationship between parent stress and child temperament
in medically fragile children. Poster presented at the
Third Annual Child Health Psychology Meeting,
Gainesville, Florida, April 22.
Bushman, K., Craig, D., & Emerson, E. (1993). Gender
issues: Eroding the myth. Presentation at the Western
Psychological Association - Rocky Mountain Psychological
Association Annual Meeting, Phoenix, Arizona, April 23-25.
subtypes of anorexia nervosa: A critical review. Poster
presentation at the Western Psychological Association
Annual Convention, Portland, Oregon, April 30.
in self-report instruments designed to assess the eating
disorders. Presentation at the Rocky Mountain Conference
on Eating Disorders, Colorado Springs, CO, May 2-4.
Emerson, M.S., Marchant, W., Whiston, S., & Kruse, E.
(1988). The career development of a counselor: A four
decade perspective. Presentation at the American
Association for Counseling and Development, Chicago, IL, March 19-22.

AFFILIATIONS

American Psychological Association
Western Psychological Association
Sigma Xi Research Society
American Association of University Women

LICENSES AND CERTIFICATIONS

Licensed Marriage and Family Therapist, Nevada, 1987 - present
Licensed Professional Counselor, Texas, 1987-1990
Certified Substance Abuse Counselor, Nevada, 1986-1988