Cognitive Behavior Therapy for Negative Body Image in Obese Women

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Negative body image is a major concern of overweight persons, yet current obesity treatment programs have not addressed this problem. In the present study, 51 obese women were randomly assigned to cognitive behavioral body image therapy (CBT) or no-treatment. Patients were treated in small groups for 8 two-hour sessions. Therapy included information to challenge negative stereotypes of obesity, modification of intrusive thoughts of body dissatisfaction and overvalued beliefs about physical appearance, exposure to avoided body image situations, and elimination of body checking. No assistance was provided to change eating or exercise behaviors. CBT subjects showed significantly improved body image. Psychological symptoms, self-esteem, overeating, and eating guilt also improved. Weight was unchanged for most subjects and unrelated to treatment outcome overall.

Negative body image is a concern of most overweight persons, but this issue has been neglected in the behavioral treatment of obesity. Overall, studies of nonclinical samples show that obese persons do not differ from the nonobese in psychological symptoms, psychopathology, and personality. On the other hand, they differ in body image (Stunkard & Wadden, 1992). Compared to normal weight individuals, obese persons overestimate or distort their body size more, are more dissatisfied and preoccupied with their physical appearance, and avoid more social situations due to their appearance (Cash, 1990; Collins et al., 1987; Tiggemann & Rothblum, 1988). That is, all three components of body image (Rosen, 1990), perception, cognition/affect, and behavior can be more troublesome for obese persons.

Problems of body image range on a continuum from mild body dissatisfaction or feelings of unattractiveness to an extreme preoccupation with physical...
appearance that impairs functioning. Presently, the only accepted term for a clinically significant body image problem is body dysmorphic disorder ([BDD]; Phillips, 1991). However, BDD is inappropriate for obese persons who are more than mildly overweight because the disorder refers to concern about imagined or minimal physical defects (Rosen, 1995). Lacking an alternative term that is widely used to represent body image problems in obesity, we will use the term “negative body image.” It implies a condition that is more distressing and inhibiting than ordinary body dissatisfaction. (Later we will describe body image complaints in our subjects more concretely by comparing them to norms on body image measures.)

Psychological therapy for negative body image is still being developed and is not widely available. Moreover, people generally believe that if you are overweight, the best way to improve your body image is to lose weight, i.e., change your body. In fact, when asked about their reasons for attempting weight reduction, most obese persons, especially women and mild to moderately obese individuals, report the most important one was a desire for a better physical self-image (Berman, 1975; Hayes & Ross, 1987; National Institutes of Health Technology Assessment Conference Panel, 1992).

This raises an important question of whether weight reduction is truly effective for body image change. Any answer to this must be tentative because body image has been virtually ignored in obesity treatment outcome. The most information available is on severely obese persons who have undergone gastrointestinal obesity surgery. In conjunction with their dramatic weight reduction, these subjects show greatly improved body image after surgery (Stunkard & Wadden, 1992). Obese subjects also showed a much improved body image when assessed immediately after they lost a large amount of weight on a liquid very-low-calorie diet (Cash, 1994). Beyond these studies, we were unable to find any others that reported meaningful improvements in body image with dieting or behavioral obesity treatment (that is, body image in the sense of satisfaction or social comfort with appearance). Furthermore, based on retrospective descriptive studies, losing weight does not guarantee a “normal” body image. Formerly overweight persons score closer to obese than nonobese subjects on measures of body image (Cash, Counts, & Huffine, 1990). Even if the evidence was strongly in favor of weight reduction as a means of improving body image, any improvement would be only temporary for most participants due to the high rate of weight regain in obesity treatment programs. Those who do regain weight report the most negative effect is on satisfaction with appearance (Wadden, Stunkard, & Liebshutz, 1988). In sum, based on the available data, non-surgical weight reduction programs cannot be described as effective treatment for negative body image in obesity.

Given the relevance of body image to obesity, one might hope that recommendations for adjunctive psychosocial interventions (Brownell & Wadden, 1991) would have been heeded by behavioral obesity researchers. Yet this is not the case. We repeated Brownell and Wadden’s review (1986) of the behavioral obesity treatment literature for 1978 and 1984, and added a third year, 1990. We found that only one study evaluated body image after weight reduction. Not one included any psychological techniques specifically designed to modify...
negative body image. To the best of our knowledge, no other weight reduction study in the behavioral or medical literature has included body image modification techniques. In conclusion, behavioral weight control programs have not targeted the body image problem.

Alternative approaches to improve body image in the obese have been reported. In an uncontrolled study, Polivy and Herman (1992) helped obese women to recognize the futility of trying to lose a large amount of weight and the negative consequences of dieting. Subjects learned to replace restrained eating behavior with "natural" eating. After therapy, subjects reported less restraint, binge-eating, depression, and negative self-esteem; however, body satisfaction was unimproved. Ciliska (1990) randomly assigned obese women to anti-dieting education, anti-dieting education plus experiential body image exercises, and no-treatment control. Subjects who received either intervention decreased dieting behavior; however, they failed to show any meaningful improvement in body dissatisfaction and remained in the clinically severe range along with the no-treatment control subjects. An anti-diet, anti-weight reduction movement has emerged among psychologists who are concerned about the poor outcome in obesity treatment (Garner & Wooley, 1992; Rothblum, 1993); however, these results show that giving up dieting by itself does not lead to improved body image.

Roughan, Seddon, and Vernon-Roberts (1990) reported an uncontrolled evaluation of a program to decrease overeating and dietary restraint and to help participants accept their weight. Although body dissatisfaction was reduced, the results for obese and normal weight subjects were pooled together. Moreover, improvement could not be attributed solely to the body image component of therapy, because the subjects had also learned to change eating habits, and had lost weight. McCrea and Summerfield (1988) had overweight women look at video recordings of themselves and discuss their appearance while being discouraged from self-criticism. After treatment, subjects decreased size overestimation (body image distortion) more than subjects who received training in a behavioral weight loss program; however, the study was quasi-experimental. Although these two studies are somewhat encouraging, neither was methodologically adequate.

There are five controlled studies showing that cognitive behavior therapy is an effective treatment for negative body image in normal weight college women (Butters & Cash, 1987; Dworkin & Kerr, 1987; Grant & Cash, in press; Rosen, Cado, Silberg, Srebnik, & Wendt, 1990; Rosen, Saltzberg, & Srebnik, 1989). Because these subjects complained of excessive preoccupation with weight and body shape, this type of body image therapy could be effective with obese subjects as well. However, this remains to be tested, because none of these studies included overweight subjects. Weight status of body image therapy subjects is an important variable to consider in the generalization of treatment findings. Compared to the normal weight, obese persons have real, not imagined, weight problems and are subjected to negative prejudice. Obese persons often have physical health problems associated with their overweight, and this fact might further complicate body image change.

The present investigation was designed to evaluate cognitive behavior therapy
compared to a no-treatment control using a clinical sample of overweight subjects seeking help for negative body image. We predicted that treatment would lead to improved body image and psychological adjustment, even though subjects were not being helped to lose weight or modify eating habits. However, we did assess eating habits and weight, because it seemed that some changes in these nontargetted variables might take place. It seemed possible if subjects learned to “accept” their obesity, they might abandon their weight control efforts already in place and gain weight. Alternately, improved body image might facilitate weight reduction and improved eating behavior, or body image improvement could be completely unrelated to changes in weight or eating habits. Information relevant to these questions would be useful for body image theory and for patients and clinicians who are concerned about alternative approaches to obesity.

Method

Subjects

Potential subjects were 77 overweight women and men who requested treatment of negative body image at an outpatient clinic, upon referral by mental health therapists and general physicians or in response to newspaper announcements of a “body image therapy” program. In preliminary information given to subjects, they were told the goal of this program was to improve body image, not to lose weight, and that it did not involve dieting or exercise. In order to accommodate the full range of negative body image in overweight persons who might seek this treatment, no preconceived cutoff score on body image measures or standard definition of negative body image was used (see section on “clinically significant improvement” in Results for a description of negative body image severity at pretreatment).

We excluded two subjects having bulimia nervosa with vomiting in order to provide them with more comprehensive intervention. However, we included subjects with mild to moderately severe eating disorders. One subject (2%) met the DSM-IV criteria for the nonpurging type of bulimia nervosa (binge-eating, fasting, and overconcern about shape and weight; American Psychiatric Association, 1994). Twenty percent of subjects met the criteria for binge eating disorder (i.e., recurrent, distressing episodes of binge-eating in the absence of inappropriate compensatory behavior such as fasting or vomiting; Spitzer et al., 1993). Eating disorder diagnoses were made using the Eating Disorder examination (Cooper & Fairburn, 1987; see below).

Twelve other persons were excluded: two psychotic patients and 10 male patients excluded in order to make the therapy groups more homogeneous. Six referrals did not complete the initial evaluation, and six eligible patients were unavailable or decided not to undergo treatment. This left 51 women who participated in the treatment study.

All subjects were overweight, defined as equal to or greater than a body mass index (BMI) of 27.3, the cutoff employed by the National Center for Health Statistics (Najjar & Rowland, 1987). The mean BMI was 33.60 (SD = 5.99, range = 27.46 to 59.83). The mean weight over ideal was 51.62°70 (SD =
28.7, range = 22% to 173%). Distribution of obesity severity from least to most, using the American Heart Association system (Bray, 1992) was: 26% Class I (BMI = 27.3 to < 30), 42% Class II (BMI = 30 to < 35), 22% Class III (BMI = 35 to < 40), and 10% Class IV (BMI = 40 or higher). All subjects had a history of repeated dieting. We included subjects without regard to their present effort to lose weight. At the beginning of the study, 10% of the participants were involved in an organized weight control program such as Weight Watchers or International Diet Systems. Twenty percent reported a definite effort to lose weight, though not necessarily with success, with an unsupervised program of their own (operationally defined as answering “yes” to the question: “Are you currently trying to lose weight?” and scoring 4 or above on three items from the Eating Disorder Examination: “eating restraint,” “food avoidance,” and “dietary rules”). None were participating in a behavior therapy weight control program, very low-calorie diet, cosmetic liposuction, or gastrointestinal obesity surgery.

The subjects’ ages ranged from 23 to 61 years (M = 39.6, SD = 9.2). Fifty-two percent were college graduates, 24% had some college, 20% had a high school degree, and 4% did not complete high school. Sixteen percent were unemployed. Fifty percent were married, 36% were never married, 11% were divorced, and 2% were widowed.

**Measures**

*Body Dysmorphic Disorder Examination (version 3.1)*. This is a 32-item structured clinical interview designed to measure the cognitive and behavioral symptoms of body dysmorphic disorder and negative body image over the past four weeks (Rosen & Reiter, 1994). It taps into self-consciousness, preoccupation and dissatisfaction with physical appearance, overvalued ideas about the importance of appearance in self-evaluation, avoidance of social situations due to appearance concerns, and body camouflaging and body checking behavior. It was scored for the total severity of negative body image on 28 items rated 0 to 6, higher scores being more negative. Psychometric studies (Rosen & Reiter, 1994) with clinical and nonclinical samples showed the BDDE has acceptable test-retest reliability (r = .94), internal consistency (r = .88 to .91), and concurrent validity with other body image questionnaires (r = .37 to .77). Fifteen subjects were randomly selected from this sample for a second, independent interview. The interrater reliability was r = .86 for the total score.

*Body Shape Questionnaire*. The BSQ is a 34-item body image questionnaire (rated 1 to 6 for the past four weeks) that measures desire to lose weight, body dissatisfaction, thoughts of being too big or too fat, feelings of fatness after eating, and self-consciousness about weight in public (Cooper, Taylor, Cooper, & Fairburn, 1987). Higher scores represent more negative body image. The coefficients of internal consistency, test-retest reliability, and concurrent validity with other measures of body satisfaction are adequate: r = .97, .88, and .66, respectively.

*Body size estimation*. A size estimation procedure was used to measure perception of body size. Subjects estimated the size of the chest, waist, hips, ab-
domen, and thighs with moveable markers on a table. Actual size was then measured with calipers. Size distortion was calculated as estimated size divided by actual size, multiplied by 100. Scores over 100 represent overestimation (see Willmuth, Leitenberg, Rosen, Fondacaro, & Gross, 1985). The test-retest reliability of this type of visual size estimation task varies from $r = .79$ to $.96$ (Ben-Tovim, Whitehead, & Crisp, 1984). Using obese subjects who completed the screening evaluation for this study ($N = 71$), our size estimation procedure correlated modestly with the Body Shape Questionnaire (Cooper et al., 1987) ($r = .43, p < .01$) and the Body Dysmorphic Disorder Examination (.25, $p < .05$). Thus, greater size overestimation is associated with more negative body image attitudes and behaviors.

**Brief Symptom Inventory** (Derogatis & Spencer, 1982). We calculated the Global Severity Index, which is the average severity of 53 psychological symptoms over the past week, rated 0 to 4. Test-retest reliability is $r = .90$, and internal consistency ranges from $r = .71$ to $.85$. Validity coefficients with the MMPI are above .30.

**Rosenberg Self-Esteem Scale.** This is a 10-item, 1 to 4 point scale that measures attitudes regarding general self-worth; higher ratings indicate more positive self-esteem (Rosenberg, 1979). The scale has acceptable test-retest reliability (.77) and internal consistency (.89), and it correlates significantly with peer ratings ($r = .32$; Demo, 1985).

**Eating Disorder Examination (version 11.3).** The Eating Disorder Examination (EDE) is a semi-structured clinical interview that assesses symptoms of anorexia and bulimia nervosa and other eating disorders over the past four weeks (Cooper & Fairburn, 1987). The three scales that tap into eating attitudes and behavior were used. The EDE Restraint Scale (5 items) measures restriction of food intake, tendencies to avoid meals and high calorie foods, and the attempt to obey rigid rules for dieting. The EDE Overeating Scale (8 items) measures the frequency of overeating episodes and the severity in terms of feelings of being out of control, the duration of overeating, and the degree of fullness. The Eating Concern Scale (5 items) measures guilt and preoccupation with eating, fear of losing control over eating, concern about eating in front of other people, and secretive eating. Total scores are reported based on items ratings of 0 to 6. Concurrent validity coefficients with other measures of eating behavior range from .30 to .90 (Cooper & Fairburn, 1987; Cooper, Cooper, & Fairburn, 1989; Rosen, Vara, Wendt, & Leitenberg, 1990). Ten subjects were randomly selected from this sample for a second, independent interview. The interrater reliability correlations for total scores on the three scales were: $r = .89, .85$, and $.96$, respectively.

**Procedure**

Subjects signed a consent prior to the initial evaluation and were randomly assigned to cognitive behavior therapy (CBT) ($N = 27$) or no-treatment control ($N = 24$). Several $t$-tests performed on values of age, education, body mass index, marital status, and the dependent variables revealed no significant differences between the experimental conditions at baseline. Subjects were charged a fee for therapy based on a sliding scale. Two patients dropped out
of CBT after two sessions, and one dropped out of the no-treatment control condition, leaving 25 and 23 subjects respectively. In addition to the pretreatment assessment, subjects were assessed again two weeks after the treatment vs. no-treatment phase. Subsequently, subjects in the no-treatment condition were offered therapy thereby limiting the experimentally controlled portion of the study to pre- to posttreatment. Treatment subjects were assessed a third time 4.5 months after treatment ended. Assessments were performed by trained BA level research assistants who were uninformed of the subjects' experimental condition at posttreatment or follow-up evaluations.

No-treatment control. These subjects were promised therapy after a minimum of a 10-week waiting period. They agreed to not begin any new psychological treatment for body image concerns during the waiting period.

Cognitive behavior therapy. Treatment was provided in groups of four or five patients with one therapist, and was scheduled as eight weekly, 2-hour sessions. If any member of the group was unable to attend a session, the session was canceled and rescheduled so that all participants would be exposed to the complete therapy program. Consequently, the groups varied in the spacing of treatment sessions, from eight to twelve weeks. Therapists were the three authors: a clinical psychologist and two post-masters level graduate students in clinical psychology.

Therapy was modeled after the cognitive behavioral body image therapy of Rosen et al. (1989, 1990), but was tailored to address body image attitudes and behaviors that are more common in overweight persons (the treatment manual is available from the authors). Homework instructions and supplementary information about body image were provided via an audiotape series and workbook by Thomas Cash (1991).

(a) The goal of session one was to present an overview of body image and the social aspects of being overweight in a weight-conscious society. Body image was defined in terms of its perceptual, cognitive, and behavioral manifestations. Based on social-psychological studies of physical appearance and body image, we explained that overweight persons learn negative body image attitudes in part from the modeling of cultural stereotypes about obesity. Subjects gave examples of negative prejudice they observe. We explained that through social modeling, they learned they must lose weight in order to feel better about themselves. The subjects then evaluated how effective weight reducing had been in improving their body image. Using their examples, we concluded that changes in their physical appearance through weight reduction had not always led to improved body image; that body image is a subjective, psychological construct; that the two variables, physical appearance and body image, can be independent; and that body image can be altered without having to change physical appearance (although they were free to try to lose weight during therapy). Homework included audiotaped information on the psychology of physical appearance, self-assessment questionnaires on body image situations, daily self-recording of body image thoughts and behaviors (the body image diary was kept daily throughout treatment), and a worksheet for a developmental history of their body image.

(b) A goal of session two was to present individual factors in the cause and
maintenance of negative body image (Rosen, 1992). Using their written developmental history, subjects identified personal experiences during childhood and adolescence that preceded their negative body image. Common antecedents were being teased, criticized, or rejected for being overweight by family or peers; failing publicly in athletic activity; and being physically or sexually abused. We explained that personal experiences of humiliation condition body image distress in similar situations through generalization. Subjects reported examples of relevant, current situations from their self-assessment homework.

Using their self-monitoring diary, subjects identified examples of negative self-statements about physical appearance or "negative body talk" (e.g., "My rear is disgusting,"), negative implications of appearance for self-worth (e.g., "I'll never get married."), and body image avoidance and checking behavior (e.g., wearing baggy clothes and excessive weighing). We explained that these factors were responsible for maintaining their negative body image and would be the targets for the remainder of therapy. For homework, they were instructed in progressive muscle relaxation via audiotape and constructed a hierarchy of body area dissatisfaction.

(c) The goal of session three was to begin teaching the subjects to tolerate distress during exposure of their physical appearance. Subjects stood one at a time and revealed their hierarchy of distressing appearance features (clothed) while other members scrutinized them. Efforts to hide (e.g., folding arms over the stomach) were stopped. Subjects verbalized their typical self-descriptions. Although fatness was not denied by the other group members, needless negative body talk was identified and the subjects practiced verbalizing more objective sensory descriptions of the body parts (e.g., "round stomach" or "big stomach" instead of "jelly belly" or "disgusting flab"). To help them with intrusive negative thoughts, subjects were instructed to distract themselves by repeating the neutral self-description immediately after intrusive negative body talk. To control distress, they also practiced quick induction of relaxation while remaining standing with their appearance exposed. For homework, subjects began working through exposure of their hierarchy of body areas, in privacy, by viewing themselves part-by-part while practicing neutral self-descriptions and using relaxation as needed. The hierarchy was completed first clothed, then unclothed over the next two weeks. The other assignment was audi-taped instruction in principles of cognitive therapy including worksheets on which they wrote typical maladaptive thoughts about their physical appearance and disputing thoughts to correct them.

(d) The goal of session four was for subjects to identify maladaptive assumptions about their appearance and to practice cognitive restructuring. Subjects were questioned about their beliefs in situations from their body image self-monitoring diary until they were able to verbalize a chain of maladaptive thoughts in greater detail than typically recorded in the diary. The therapist would select a simple statement of body dissatisfaction such as "I looked really fat" and then instruct the subject to follow this thought to the ultimate implications of looking "fat" in that situation. Typically, the sequence of thinking the subjects learned to recognize was: I look defective, other people notice and care about my defect, they evaluate me negatively as a person, and conse-
sequently the defect proves something negative about my self and worth to other people. Common examples were thinking that the defect proved they were unlovable, foolish, stupid, lazy, weak, incompetent, lacking in self-respect, promiscuous, immoral, disgusting, freakish, alien, unfeminine, etc.

Subjects were instructed to continue neutral or even positive self-descriptions in response to negative body talk, although we agreed that some amount of body dissatisfaction is not unrealistic given their obesity. Beginning in this session, however, cognitive restructuring focused on the negative meanings attributed to physical appearance that caused subjects to feel ashamed around other people. Using standard cognitive restructuring interventions, subjects evaluated the evidence for and against their beliefs and constructed alternative, disputing thoughts. Realistic thoughts of being discriminated against or rejected because of their obesity were not discounted, but subjects constructed more self-enhancing attitudes in response to these experiences. Finally, a frequent theme that had to be dispelled was that learning to like one’s appearance more would cause them to abandon self-restraint and become more overweight. For homework, subjects were given a new self-monitoring diary with space for recording disputing thoughts they rehearsed or could have rehearsed in distressing body image situations.

The goal of session five was to strengthen their cognitive restructuring skills. Subjects reported situations from their diary in which they had trouble developing believable disputing thoughts. With questioning from the therapist and modeling from the other group members, the subject evaluated the evidence for and against the disputing thought and, if necessary, constructed other disputing thoughts. The principle of stress inoculation was explained, and subjects were instructed to rehearse disputing thoughts in advance of encountering distressing body image situations. Additional help with cognitive restructuring was provided as needed in the remaining three sessions. Homework consisted of completing cognitive restructuring exercises in the diary and listening to audiotaped information on principles of exposure and response prevention as they relate to body image behaviors.

The goal of session six was to plan unsupervised exposure therapy assignments that the subjects were to complete before the next session. The rationale for exposure therapy was to extinguish anxiety by facing feared body image situations and to eliminate self-defeating, rigid and inhibited physical activity, dress, and posture. Examples of exposure assignments were: wearing a form fitting outfit instead of baggy clothes, wearing a blouse tucked in, undressing in front of spouse, not folding arms over the stomach to hide it, exercising in public wearing workout clothes, eating in public, drawing attention to appearance with more trendy clothes, accentuating a distressing feature (e.g., wearing a colorful necklace around a fat neck), standing closer to people, and trying on clothes or make-up in stores and asking sales clerks for feedback on their looks. In addition to this homework, an exposure was sometimes arranged to take place in the next session. For example, a subject might plan to wear tight jeans.

The goal of session seven was to plan homework assignments that would increase the difficulty of exposure by varying the situations with respect to
familiarity of people, physical proximity to others, and type of social interaction (e.g., wearing a bathing suit in their backyard vs. at a public swimming pool; asking a salesclerk for feedback vs. a spouse). Another goal was for the subjects to identify behavioral rituals, mainly checking behavior, that promoted preoccupation with their appearance, and to plan response prevention at home. Examples of assignments were decreasing or eliminating weighing, inspecting the body in the mirror, or measuring body size with measuring tapes or certain special clothes. Some subjects were instructed to set a fixed time for dressing or refrain from multiple changes of clothes. Some subjects were instructed to first accentuate their desire to check, by tucking in their blouse for instance, and then refrain from inspection in the mirror. Repeatedly asking other people for reassurance and comparing oneself with other people are other forms of body checking that were targeted. The goal of session eight was to plan more exposure and response prevention assignments for subjects to attempt between the end of therapy and their return for the posttreatment assessment.

Results

Statistical Analyses at Posttreatment and Follow-up

The difference between the treatment and no-treatment conditions at posttreatment on the measures of body image, psychological adjustment, and eating behavior and attitudes was examined in a between-group multivariate analysis of covariance, with pre-treatment scores as the covariate. The main effect for group was significant, $F(8,31) = 6.10, p < .001$, indicating that the subjects who received treatment were much improved compared to the no-treatment subjects. CBT subjects were significantly improved at posttreatment on every measure compared to the control subjects, according to univariate analyses of covariance (ANCOVA) derived from the multivariate analysis (see Table 1).

An analysis of the follow-up assessment for CBT subjects only was performed in a within-subject multivariate analysis of variance using pre-, posttreatment, and follow-up assessments. The main effect for time was significant, $F(16,74) = 6.10, p < .001$, indicating that therapy subjects were significantly improved over time. Post-hoc paired comparisons controlling for family-wise error were performed to test differences from pre- to posttreatment and pretreatment to follow-up on individual dependent variables (see Table 1). CBT subjects were significantly improved on every measure at posttreatment and follow-up compared to baseline. The only exception was that CBT subjects increased their level of dietary restraint at follow-up to a level equivalent to baseline.

Rates of Clinically Significant Improvement

At pretreatment, the mean scores for the Body Dysmorphic Disorder Examination and Body Shape Questionnaire were in the range of clinic patients and at the high end of negative body image (see Table 1) (Cooper et al., 1987; Rosen & Reiter, 1994). With respect to individual cases, 82.4% of the subjects scored more than one standard deviation above the norm for adult commu-
nity women on both the BDDE and the BSQ; 13.7% scored this high on only one of the measures; and two subjects (3.9%) did not exceed +1 SD on either measure, although their baseline scores still were above the norm. According to individual items on the Body Dysmorphic Disorder Examination (see Rosen & Reiter, 1994 for core items relevant to body image disorder), all the subjects endorsed moderate to severe levels (ratings of 4 to 6 on a 0–6 scale) of distressing dissatisfaction and preoccupation with appearance, overemphasis given to appearance in self-evaluation, negative self-evaluation attributed to appearance, and feelings of embarrassment or self-consciousness in social situations. In addition, 38% reported moderate to severe avoidance of social or recreational activities due to feelings of embarrassment about physical appearance.

At follow-up, the mean scores on the Body Dysmorphic Disorder Examination and Body Shape Questionnaire for the CBT subjects were .56 and .55 SDs above the average for community women (Cooper et al., 1987; Rosen & Reiter, 1994), and .11 and -.02 SDs from the mean scores of obese community women (Rosen, Ramirez, & Fisch, 1994). Therefore, negative body image symptoms in therapy subjects dropped to a level somewhat above average compared to women in general and average compared to nonclinical obese women. The treatment effect size (pretreatment M minus follow-up M, divided by SD of pretreatment) was 1.86 for the BDDE and 1.46 for the BSQ.

With respect to individual cases, we calculated the percentage that was significantly improved using a conservative set of cutoffs for change on the two body image questionnaires. The criteria were (a) a score within the normal range after therapy, that is, less than 1 SD above the norm for non-clinical community women (Cooper et al., 1987; Evans & Dolan, 1993; Rosen & Reiter, 1994) and (b) a score that was lower than the pretreatment score minus two standard errors of measurement. Using Speer’s (1992) recommendation for calculating clinically significant change, we centered this confidence interval on an estimate of the subjects’ “true” pretreatment score which adjusted for regression to the mean. Of the 24 CBT subjects who were in the severe range on the Body Dysmorphic Disorder Examination at baseline, 70.8% and 78.3% were significantly improved at posttreatment and follow-up respectively. Of the 21 CBT subjects who were severe on the Body Shape Questionnaire at baseline, 70% and 68.4% were significantly improved at posttreatment and follow-up respectively. None of the no-treatment subjects were improved on the BDDE and one (5%) was improved on the BSQ.

Weight

An analysis of covariance to test the difference between groups on weight at posttreatment, controlling for baseline was not significant (see Table 1).

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1 The mean score on the BDDE for a randomly selected sample of female university employees is 27.8 (Rosen & Reiter, 1994). The mean score on the BSQ for a consecutive sample of women attending a family planning clinic is 85.1 (Evans & Dolan, 1993).

2 The mean scores on the BDDE and BSQ for a nonclinical sample of 38 obese university employees and students is 43.8 and 97.8.
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\(a\) \(N = 24\) at follow-up. \(b\) \(F\)-ratios are univariate tests of differences between CBT & No-Treatment at posttreatment, controlling for baseline scores (\(df = 1,38\)).

\(*p < .01, **p < .001\) for post hoc comparisons of pre- to posttreatment and pretreatment to follow-up for CBT S's.
Also, a within-subject analysis of variance testing for changes over time for the CBT subjects showed their weight remained stable at posttreatment and follow-up ($F(2,44) = .21$, ns). Although weight did not change on average, there was considerable individual variability. At follow-up, 3 out of 24 CBT subjects weighed at least 10 pounds less than baseline and five weighed at least 10 pounds more. We computed change scores on weight and examined their correlations with change scores on the three body image measures (change scores from pre- to post- & pre- to follow-up). The association between weight change and body image change was not significant. In addition, univariate analyses of covariance of follow-up scores on the body image measures, controlling for baseline were not statistically significant for people who gained weight (more than 9 lbs) compared with people who maintained weight (weight within + or -9 lbs of baseline).

**Eating Disorder Subjects**

CBT subjects who met the criteria for binge eating disorder or bulimia nervosa without vomiting were compared with the other treatment subjects. The two subgroups did not differ on the body image measures at posttreatment and follow-up, according to analyses of covariance.

**Adherence, Credibility, and Satisfaction**

The cancellation policy was effective as 24 of the 25 CBT subjects attended all eight sessions. One subject received six of eight sessions, because on two occasions she failed to notify the group in-time in order to reschedule meetings that she could not attend. At each session subjects returned a homework completion checklist, and the therapists reviewed each assignment. Of the 41 homework assignments, subjects completed an average of 86% ($SD = 17$). Thirty-two percent completed less than 80% of assignments. Only one subject completed less than half. The correlations between percent of homework completed and change scores on body image measures at posttreatment and follow-up were not significant. All subjects completed the posttreatment (or no-treatment) evaluation. One CBT subject refused to return for the follow-up evaluation. No CBT subject reported beginning psychological treatment outside of the program during the treatment or follow-up phase.

After the first therapy session, subjects rated their expectation to benefit from therapy on a scale of 1 to 7; the mean was 5.74 ($SD = 1.29$). After treatment, their satisfaction rating was 5.44 ($SD = 1.5$) and the degree to which they would recommend the program to others was 6.0 ($SD = 1.35$) (one to seven ratings, seven = “completely satisfied” and “recommend enthusiastically”). Eighty-eight percent said they would recommend the program.

**Discussion**

Cognitive behavioral body image therapy is an effective treatment for negative body image in obese women. Although therapy did not result in a complete elimination of body dissatisfaction according to the Body Shape Questionnaire scores, the CBT subjects were substantially improved on this aspect.
of negative body image. According to calculations of treatment effect size, the subjects made even greater improvements on the Body Dysmorphic Disorder Examination, suggesting they were better able to overcome some of the more negative symptoms of negative body image than they were able to reduce body dissatisfaction.

At the beginning of therapy, most subjects were concerned that self-acceptance would lead to greater obesity or that they would be unable to improve their body image without losing weight. The results support the conclusion that improvements in body image are independent of weight change. This finding should be reassuring to obese body image therapy subjects. However, it would be inappropriate to tell them not to expect any weight change, because one-third of CBT subjects did lose or gain weight. Because obese chronic dieters often have large weight fluctuations anyway, it would be inappropriate to conclude that weight changes or weight maintenance over the nine months of this study (pre- to follow-up assessments) were attributable to the body image therapy. The fact that there were no differences in weight change between experimental conditions supports this conclusion.

Although other psychological symptoms were not targeted in therapy, on average the total severity of symptoms and global self-esteem improved to the range of nonclinical subjects (Derogatis & Spencer, 1982; Rosenberg, 1979). The treatment program did not address eating; nonetheless, CBT subjects reported more feelings of being in control of their eating, less guilt and preoccupation associated with eating, and less binge-eating. According to norms on the EDE Eating Concern and Overeating scales (Cooper et al., 1989), subjects reported decreased symptoms on these scales to well below clinical levels of eating disorder patients. Restraint over eating returned to baseline levels by follow-up. However, this was not accompanied by weight reduction, deterioration of body image improvement, or increased binge-eating or eating guilt. We think this finding is noteworthy for obese persons who might seek body image therapy. A common fear at the outset was they would abandon efforts to control eating. However, this was not the case.

An encouraging beginning to the study of body image change in obesity, this project has several limitations and raises new questions that could be addressed in future research. A major limitation is the lack of a placebo condition to control for the nonspecific effects of therapy and the effect of experimenter demand for improvement on self-report measures. Previously, we found that an educational/non-directive supportive therapy was ineffective in changing body image on similar measures in normal weight college women (Rosen et al., 1989). However, this would need to be tested in an obese clinical sample as well. To date, body image intervention studies have relied on measures that are susceptible to self-report bias. Even if a placebo control design were to be employed, it would be useful to assess body image with some type of measure that is more objective or independent of the subject.

Another limitation is the lack of experimental control carried out to a follow-up period. The longer term effect of treatment vs. no-treatment needs to be evaluated. The length of our follow-up was short, and although there was no deterioration in treatment benefit at four months, a longer follow-up would
be desirable. It would be important to identify the predictors of unimproved participants and eventually to develop additional treatment strategies to assist them. The encouraging results in this study cannot necessarily be generalized to male patients. Finally, the benefit of integrating body image therapy into traditional weight reduction programs would be important to examine.

In conclusion, we have shown that it is possible to help overweight women to improve their negative body image attitudes and behavior using strictly a psychological approach, without any intervention to change eating, exercise, or weight. Although this study is only a first step, we believe the results are strong enough to warrant the use of this program by other investigators and clinicians.

References


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