

Nondietering Versus Dietering Treatment for Overweight Binge-Eating Women

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This study evaluated the effectiveness of nondieting versus dieting treatments for overweight, binge-eating women. Participants ($N = 219$) were randomly assigned to 1 of 3 groups: diet treatment (DT), nondiet treatment (NDT), or wait-list control (WLC). DT received a balanced-deficit diet reinforced with behavioral strategies. NDT received therapy designed to help participants break out of their dieting cycles. Treatment in both conditions was administered in weekly groups for 6 months, followed by 26 biweekly maintenance meetings, for a total of 18 months of contact. At 6 months posttreatment, DT lost 0.6 kg while NDT gained 1.3 kg. Both treatment groups reduced their Binge Eating Scale scores significantly more than WLC. At 18-month follow-up, both treatment groups experienced weight gain but maintained similar reductions in binge eating. Results indicate that neither intervention was successful in producing short- or long-term weight loss. Therapist biases, which may have affected treatment integrity, and other methodological issues are discussed in relation to the small weight losses achieved.

Estimates of binge eating among obese patients range from 20% to 50%, depending on the criteria used and the study population (Bruce & Wilfley, 1996; Spitzer et al., 1993; Wing & Greeno, 1994; Yanovski, Nelson, Dubbert, & Spitzer, 1993). Obese binge eaters experience greater levels of eating-related and general psychopathology including earlier onset of obesity, dieting and weight concerns, greater body dissatisfaction and preoccupation with thinness, and increased levels of cognitive distortions, depression, anxiety, and personality disorders (Bruce & Wilfley, 1996; de Zwaan & Mitchell, 1992; Friedman & Brownell, 1995; Kuehnel & Wadden, 1994; Marcus, Wing, & Hopkins, 1988; Telch & Agras, 1994).

It is unclear whether or not binge-eating obese patients experience greater difficulty in treatment programs as a result of these liabilities. Obese binge eaters have been found to respond to weight loss programs similarly to nonbingers, and experience similar or lower attrition rates (Ho, Nichaman, Taylor, Lee, & Foreyt, 1995; Marcus & Fairburn, 1995; Marcus et al., 1988; Porzelius, Houston, Smith, Arfken, & Fisher, 1995; Wadden, Foster, & Letizia, 1992, 1994). However, standard therapeutic approaches to binge eating in obese populations, most notably cognitive-behavioral therapy, may have fairly high nonresponse rates, with severity of binge eating being a predictor of poor

outcomes (Agras et al., 1995; Marcus & Fairburn, 1995; Wilfley et al., 1993).

Several nondieting therapeutic approaches have been developed for the treatment of obesity (Ciliska, 1990; Polivy & Herman, 1992), based on the belief that restrictive dieting may be associated with eating-related and general psychopathology (Brownell & Rodin, 1994; Tenzer, 1989; Wilson, 1993). These approaches focus on maladaptive thoughts and moods associated with obesity rather than weight loss. The nondieting approach used in this study consists of similar psychotherapeutic methods aimed at helping women resolve issues related to eating and exercise that may hinder long-term adherence. Then, gradual changes in eating and exercise are recommended in ways that are designed to be perceived as enjoyable and nonrestrictive.

The purpose of this prospective, randomized, controlled study was to evaluate the effectiveness of this nondieting approach in the treatment of obese, binge-eating women, compared with a standardized, behavioral dieting treatment and a control group.

Method

Participants

The mean age of participants was 40 years ($SD = 6.3$, range = 25 to 50 years). Participants' mean pretreatment weight was 88 kg ($SD = 9.6$, range = 66 to 110 kg). The mean body mass index (BMI) was 33 kg/m² ($SD = 3.4$), with a range of 26 to 43 kg/m². The ethnic-racial composition of the sample was 85% White, 8% Black, and 7% Hispanic. Of the total participants, 62% were married, 21% were single or divorced, and 17% were never married. Twenty-four percent of the participants had a college degree, 65% had some college, and 11% had a high school diploma or less. Sixty-nine percent were employed full time, and 9% part time.

Procedure

Female participants were recruited from Houston and the surrounding area using print and electronic media to publicize the study. Those

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interested phoned the clinic and were interviewed by trained recruiters. Participants had to meet the following eligibility criteria for the study: female; age 25 to 50 years; 14 to 41 kgs overweight based on the 1983 Metropolitan Life Insurance Company Height/Weight tables (Metropolitan Life Insurance Company, 1984); no medical history of diabetes, cardiovascular, or gastrointestinal diseases; no purging behavior (i.e., laxatives or vomiting) within the previous 6 months; not pregnant or breast-feeding; clearance by a physician for a walking regimen; no enrollment in another weight loss program while participating in current study; and nonsmoker. Approximately 450 individuals met the study criteria and were invited to attend screening visits.

At the first screening visit, heights and weights of the potential participants were verified by weighing them on a calibrated, balance beam scale and recording their heights using a measured tape secured on the wall. After a complete explanation of the study, informed consent was obtained. Next the Binge Eating Scale (BES; Gormally, Black, Daston, & Rardin, 1982) was administered to assess symptoms of binge eating. Persons who scored 20 or less on the BES or who failed to meet the height/weight requirements were thanked and allowed to leave. The major reason for exclusion (51%) was failure to score above 20 on the BES. A dietitian then taught the eligible participants how to complete a 7-day food record and scheduled them to return in 2 weeks with completed food records. This next visit was designated the first assessment session of the study.

At the first assessment session, a refundable \$200 deposit and a physician's release were collected. The \$200 deposit was refunded contingent on attendance at 20 or more of the first 26 meetings and completion of the 6- and 18-month assessment sessions. Body circumference measurements were taken and participants were reweighed. Participants completed psychological assessment questionnaires and had their food records reviewed by a dietitian. Following these tasks, participants were randomized and informed to which group they had been assigned.

Treatment Conditions

Participants were recruited in five equal phases and were randomly assigned to one of three groups: dieting treatment (DT), nondieting treatment (NDT), or wait-list control (WLC). Participants in each of the treatment conditions were asked to attend 24 weekly, 1-hr group sessions for 6 months followed by 26 biweekly maintenance classes for 12 months. There were five teams of instructors each consisting of a licensed psychotherapist with a background in eating disorders and a registered dietitian with extensive experience in behavior modification of obesity. During the 12 months of maintenance classes, registered dietitians conducted the sessions without the assistance of the psychotherapists.

Dieting treatment (DT). Nutritional instruction in the DT group included methods for reducing fat, increasing complex carbohydrates, and eating a variety of foods. Participants were taught to restrict their fat intake to 40 g/day and to monitor fat by keeping food records and counting the fat grams in food consumed. The diet was reinforced using the *LEARN Program for Weight Control* manual (Brownell, 1989). The emphasis was on self-control methods to regulate eating and exercise patterns. These methods included self-monitoring, stimulus control, social support, problem solving and goal setting, and relapse prevention. Participants were told to expect weight losses averaging 1 lb (0.454 kg)/week. Exercise was a home-based walking regimen, with a goal of 4 to 5 hr/week, at an intensity based on training heart rate range.

During the 6 months of weekly classes, the instructors presented information on topics including how to count fat grams, what is healthy eating, understanding the new food labels, eating away from home on 40 grams of fat per day, ABCs of behavior change, and goal setting and striving for perfection. Throughout the 12 months of biweekly maintenance

classes, the dietitians discussed topics including holidays, parties, and special events; more meatless meals; quick dinner ideas; importance of vegetables in daily meals; making low-fat lunches, snacks, and desserts; and setting realistic goals and keeping them. Subjects were weighed only at the 0-, 6-, and 18-month assessment sessions.

Nondieting treatment (NDT). The nondieting approach to obesity and binge eating was based on the philosophy that a history of diet failure and binge eating is associated with a dysfunctional set of cognitions and attitudes related to eating and exercise that may interfere with development of prudent lifestyle patterns (Foreyt & Goodrick, 1991; Goodrick & Foreyt, 1991). The intervention began with a psychotherapeutic phase covering the psychology of being an obese woman in a culture that values thinness and addressing self-esteem and body issues before attempting to modify eating and exercise. To help participants break out of dieting cycles during the 6 months of weekly classes, the instructors focused on the following areas: understanding the social and biological beginnings of restrictive dieting and overeating cycles, breaking free of these cycles (normalizing eating, becoming desensitized to social pressures for thinness, gaining self- and body acceptance, and focusing on health), repairing damaged self-esteem and relationships, enhancing self-concept, and developing and maintaining constructive social support (Foreyt & Goodrick, 1991). Part of the psychotherapeutic preparation was designed to ensure that the new eating and exercise patterns were perceived as positive lifestyle changes for improving health and energy, rather than as punitive burdens that are part of the price of obesity. To enhance the perception that the new eating plan was perceived as pleasant and nonrestrictive, gradual reduction in fat without feelings of deprivation was the goal. To enhance the perception that exercise can be a pleasurable addition to one's routine, self-regulated physical activity intensity methods were used (Goodrick, Malek, & Foreyt, 1994). The plan consisted of a home-based walking program, with a gradually attained goal of 4 to 5 hr per week.

During the 12 months of NDT follow-up classes, the dietitians presented material on various topics including weighing the benefits and risks of weight management, avoiding common thinking traps and restructuring thoughts, training in assertiveness, becoming aware of food and mood, identifying triggers to overeating, and adjusting to a nondieting lifestyle. Subjects were weighed only at the 0-, 6-, and 18-month assessments.

Wait-list control (WLC). Participants in this condition were assessed at baseline and again 6 months later. No contact occurred during this period. In order to maximize resources, the number randomized into the control group was smaller than in the experimental groups but still large enough to have sufficient power to detect group differences at 6 months.

A total of 79 participants were randomly assigned to the DT group, 78 to the NDT group, and 62 to the WLC group. Participation in the WLC ended after the 6-month assessment, at which time participants were offered a free course of treatment.

Assessments

DT and NDT participants attended three assessment sessions: baseline, 6 and 18 months. The assessments after baseline were held at the end of the weekly (6 months), and biweekly meetings (18 months). Weight was measured without shoes on a balance beam scale. Eating dyscontrol was measured using the BES (Gormally et al., 1982), which assesses symptoms of perceived lack of eating control, diet-relapse cycles with weight fluctuation, uncontrolled overeating episodes, and obsessive food thoughts. Physical activity was measured using the 7-day recall method, which assesses sleep and three intensity levels of physical activity. A formula is used to estimate total kilocalories expended per day (Blair, 1984).

Statistical Methods

Analysis of variance and chi-square tests were used to compare baseline characteristics among the treatment and control groups, and between the participants who completed and those who did not complete the 6-month assessment. Changes in primary outcomes in the treatment and control groups were compared using analysis of variance (or analysis of covariance) followed by Scheffé tests for multiple comparisons. Appropriate transformations of variables or exact tests were used when necessary to meet the assumptions of the tests. Continuous data were reported as means plus or minus standard deviations. All statistical tests were two-tailed. STATA software (StataCorp, 1995) was used for the statistical analyses.

Results

Attrition

Preliminary tests showed that the three groups were similar on baseline values of age, BES scores, BMI, and demographic variables. Twelve participants in the DT group, 13 in the NDT group, and 4 in the WLC group did not complete the 6-month assessment. The WLC participants were released from the study after the 6-month assessment. An additional 2 participants in the DT group and 3 participants in the NDT group did not complete the 18-month assessment. Participants who completed and participants who did not complete all assessments were similar at baseline in height, BMI, BES scores, age, work status, marital status, and education. The racial and ethnic distribution of dropouts was slightly different from those who stayed in the study ($p = .10$); 18% of the dropouts were Black, whereas the proportion of Black participants at baseline was 8%.

Primary Outcome Measures at Posttreatment (6 Months)

Table 1 shows summary statistics at baseline, 6 months, and 18 months for BMI, weight, BES scores, exercise (estimated kilocalories per kilogram per day) and class attendance. At 6 months, the DT group had lost 0.57 kg, the NDT group gained 1.35 kg, and the WLC group gained 0.64 kg. Multiple comparison tests on weight and BMI showed that the DT group lost significantly more than the NDT group ($p < .04$); neither the DT nor the NDT group was significantly different from the WLC group ($p = 0.26$ and $p = .70$, respectively). These associations among the groups prevailed when attendance and changes in self-reported exercise were included as covariates in the analyses. BMI and weight changes were significantly associated with changes in BES scores ($p < .001$); however, inclusion of this covariate did not alter the differences among the groups in BMI and weight changes. The DT and NDT groups showed similar reductions in binge-eating scores at 6 months (-12.40 and -10.29 , respectively, $p = .27$). Both these reductions were significantly greater than the reduction (-3.66) in the WLC group ($p < .0002$). Differences among the groups in changes in binge-eating scores were not influenced by attendance or self-reported physical activity. Figure 1 illustrates the changes in BES scores in the treatment and control groups.

Intention-to-Treat Analyses

Participants who did not complete the 6-month or 18-month assessments were assigned outcomes equal to their baseline values, and the primary analyses were redone. No differences were shown between these results and those discussed earlier for participants who completed the assessments.

Primary Outcome Measures at Follow-Up (18 Months)

At the 18-month assessment, both the DT and NDT groups had similar gains of more than 1 kg above baseline ($p = .85$). The DT and NDT groups showed similar net decreases from baseline in BES scores (-13.57 and -12.68 , respectively, $p = .66$). The DT and NDT groups both maintained the increases in exercise (0.42 and 0.50 kcal/kg/day for DT, 0.63 and 0.72 kcal/kg/day for NDT at 6 and 18 months, respectively). When included as a covariate, neither class attendance nor exercise influenced the difference between the NDT and DT groups in BMI or weight changes.

Discussion

The present comparison of a nondieting approach with a traditional, diet-based behavioral approach for obese women with binge-eating symptoms had only one notable result: a sustained reduction in binge-eating severity in both groups. The weight losses obtained were less than usually seen in studies using similar behavioral self-management methods with non-binging, obese women (e.g., Skender et al., 1996). Others (e.g., Marcus et al., 1988) also have reported small weight losses using behavioral methods with obese binge eaters. It is unclear why both of our treatment groups did poorly. We thought that perhaps obese women with elevated BES scores usually do poorly with both diet-based behavioral and nondiet approaches, but other studies have found that not to be true. For example, Porzelius et al. (1995) reported that moderate binge eaters lost more weight in a standard behavioral weight loss program than in a program targeting binge eating. Marcus and Fairburn (1995) found that binge-eating women lost weight in a behavioral weight loss program, but did not lose in a cognitive-behavioral therapy program for binge eating.

In retrospect, we think several potential problems could have been responsible for the small effect on weight loss and the regain in both conditions. The therapists led the treatment groups for only 6 months, and then left, leaving dietitians to lead the participants for the remaining 12 months of the study. Many participants revealed significant childhood traumas that they believed impacted their current eating problems and expressed anger about the psychotherapists leaving at 6 months. A previous study using a nondiet approach to weight management showed weight gain while participants dealt with the psychological issues related to a history of weight failure and social pressures to be thin (Polivy & Herman, 1992). The dietitians who remained as group leaders for our 26 biweekly maintenance meetings may have been unable to sustain effectively the treatment focus.

The diet-based, behavioral groups may have been contami-

Table 1
Means (and Standard Deviations) by Treatment Condition Over Time

Measure and condition	M (and SD) for:		
	Baseline	Posttest (6 months)	Follow-up (18 months)
Dieting treatment (n = 65)			
BMI	33.50 (3.46)	33.29 (4.03)	34.03 (4.14)
Weight (kg)	89.04 (10.15)	88.47 (11.24)	90.52 (12.37)
Binge Eating Scale	27.82 (6.13)	15.42 (7.52)	14.25 (8.93)
Exercise (kcal/kg/day)	34.35 (2.95)	34.77 (2.74)	34.85 (3.30)
Total classes attended	—	16.8 (4.4)	23.0 (6.2)
Nondietering treatment (n = 62)			
BMI	33.16 (3.21)	33.67 (3.68)	33.62 (4.34)
Weight (kg)	87.71 (9.58)	89.06 (10.61)	88.90 (12.15)
Binge Eating Scale	27.58 (5.13)	17.29 (7.77)	14.90 (10.40)
Exercise (kcal/kg/day)	34.28 (2.24)	34.91 (2.75)	35.00 (3.07)
Total classes attended	—	17.6 (4.5)	25.0 (7.1)
Wait-list control (n = 58)			
BMI	32.22 (2.97)	32.47 (3.35)	—
Weight (kg)	86.49 (9.83)	87.13 (10.56)	—
Binge Eating Scale	27.88 (5.28)	24.22 (8.85)	—
Exercise (kcal/kg/day)	34.29 (2.70)	35.56 (5.68)	—

Note. BMI = body mass index.

nated by the presence of therapists as co-leaders; deviation from a strict behavioral model as per the treatment manual was evident in the spontaneous discussions of the psychology of obesity in women in our culture. These shared, nonspecific therapeutic processes may have masked differences that might have resulted from planned treatment comparisons. The therapists apparently

were unwilling to stifle this type of dynamic in these groups, making the difference between conditions less clear. In fact, several of the psychotherapists proved to believe strongly in a feminist view that obesity treatment is part of an oppression fostered by a culture that overvalues thinness. The fact that some of the psychotherapists were strongly invested in their own

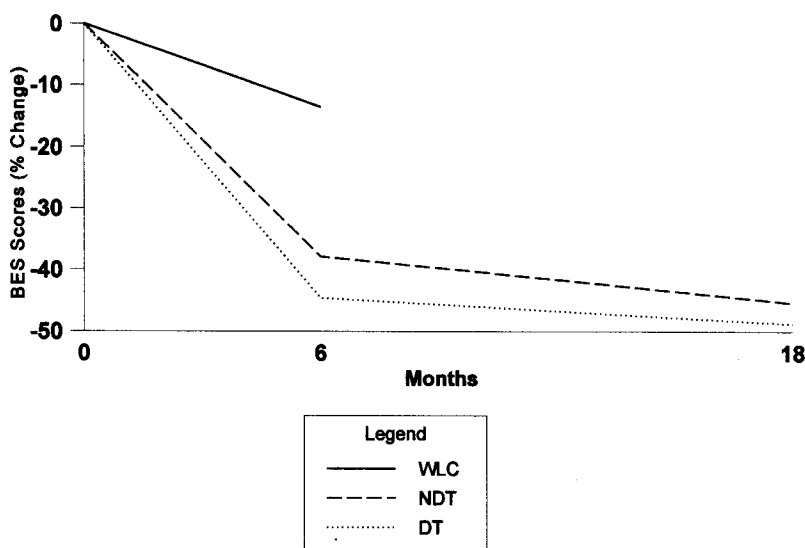


Figure 1. Changes in Binge Eating Scale (BES) scores at 6 and 18 months. WLC = wait-list control; NDT = nondiet treatment; DT = diet treatment.

treatment philosophies resulted in a lack of treatment integrity, and most likely subjects received mixed messages about the recommended eating and exercise regimens. Therapist drift from prescribed treatments is an increasingly recognized problem in clinical research, as the individuality of therapists has been found to be influential in outcomes (Strupp & Anderson, 1997). A separate analysis, however, showed that weight and BES results did not vary as a function of therapist biases. A problem related to this issue is that there may have been the failure in the NDT condition to convey clearly that although restrictive dieting is bad, the alternative proposed, gradual reduction in fat, was in fact not restrictive, and therefore preferred. The therapists and dietitians commented that the subjects seemed to cling strongly to the belief that they needed to be given a restrictive diet so that their eating could be controlled. Additionally, participants were not weighed during their regular meetings, a key element of behavioral programs.

Another limitation was that participants were selected by virtue of scoring 21 or higher on the BES. This criterion does not guarantee a diagnosis of binge-eating disorder (BED); other studies have used a cutoff of 27 (Marcus et al., 1988). Thus, results may not be generalizable to BED populations. Also, actual binge episode frequencies were not recorded.

The equivalent reductions in binge-eating scores, followed by further small reductions at final follow-up, demonstrate that both treatment approaches had a similar impact on eating disorder symptoms, even though the nondieting approach was designed to address them directly. On the basis of informal reports of group process, it appeared that both treatment groups spontaneously discussed the psychodynamics of being an overweight woman. Future research designs should use more rigorous methods to ensure therapist adherence to the treatment regimen.

In summary, two weight management treatments for obese, binge-eating women, one based on nondieting methods and one based on traditional dieting and behavioral methods, were similarly ineffective in producing weight loss. It is likely that therapist drift may have contributed to these results.

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