

Comparison of Acceptance-Based Versus Standard Behavioral Treatment for Obesity in Adults

Forman EM, Butryn ML, Juarascio AS, et al. *The Mind Your Health project: a randomized controlled trial of an innovative behavioral treatment for obesity. Obesity 2013;21:1119–26.*

Study Overview

Objective. To determine whether participants in an acceptance-based behavioral treatment (ABT) intervention for obesity lost more weight compared with those in a standard cognitive behavioral intervention (SBT) and whether the effects varied with level of interventionist expertise or patient emotional factors.

Design. Randomized controlled trial of a group-based intervention.

Setting and participants. Participants were recruited from advertisements in local newspapers and radio stations and by flyers mailed to local health care providers. Eligible participants had a body mass index (BMI) of 27–40 kg/m², were between 21 and 65 years of age, and able to participate in physical activity. Exclusion factors included medical or psychiatric conditions that could interfere with program fulfillment or pose a risk to the participant, pregnancy, recent commencement or change to the dosage of prescription medications that cause weight gain, or participation in another weight loss program.

Intervention. Participants were assigned to the ABT or SBT interventions using a computer-based allocation process for randomization. All providers leading the intervention had received training in both ABT and SBT and were categorized as either “novice” or “expert” based on experience administering behavioral weight loss interventions. Novice interventionists were doctoral students with average of 2.67 years of clinical experience, and expert interventionists were clinical psychologists with average of 7 years clinical experience. Both groups received 75-minute sessions held weekly for the first 20 weeks, and biweekly for the following 20 weeks. Both groups utilized self-monitoring and goal setting, prescribed identical diet recommendations and physical activity goal progressions, and all participants were taught stimulus control, behavior shaping, behavior analysis, and relapse prevention strategies.

In addition, participants in the SBT group received a protocol that incorporated facets of the LEARN [1] program and the Diabetes Prevention Program [2] using a traditional cognitive-behavioral model. Strategies that were taught included the practice of altering thoughts, improving self-efficacy and self-esteem, and management of cravings by either distraction or confronting the craving. In contrast, the ABT program focused on acceptance and commitment geared toward maintaining program compliance, building tolerance to internal distress and external factors, and training in mindfulness and awareness. This included recognizing factors of noncompliance, coping with distress, and preventing mindless eating. There was a heavy emphasis on weight goals reflective of and linked to personal values.

Main outcome measures. The main outcome was percentage of weight lost after 40 weeks of treatment and at 6-month follow-up assessments. Interventionists used a range of tools to assess emotional factors. The Quality of Life Inventory (QOLI) measured satisfaction and priorities in various life-related areas, the Power of Food Scale (PFS) assessed the level of influence on food-related thoughts and feelings exerted by the presence or availability of a tempting food, and the Beck Depression Inventory-II (BDI-II) assessed mood. The Emotional Eating Scale (EES) assessed emotional eating, and the Eating Inventory (EI) surveyed disinhibition. In order to measure acceptance of cravings and willingness to control or change these urges, the Food Acceptance and Awareness Questionnaire (FAAQ) was used.

Researchers used one-way ANOVAs to test the main outcomes and the interaction between emotional variables and the intervention on weight. For those participants who dropped out, researchers assumed regain of 0.3 kg per month for analysis of results.

Results. Participants totaled 128 individuals with 5 ABT groups ($n = 74$) and 4 SBT groups ($n = 54$). The groups

were similar with regard to age (ABT mean = 46.21, SD = 12.91, SBT mean = 44.98, SD = 12.76), BMI (ABT mean = 34.43, SD = 3.62, SBT mean = 33.64, SD = 3.65), and in psychological and behavioral characteristics. Using an intention-to-treat analysis, the ABT participants experienced slightly more weight loss ($10.90 \pm 8.32\%$) posttreatment compared with SBT ($8.74 \pm 8.38\%$), but this difference was small and not significant ($P = 0.24$). There were also no significant differences in weight loss at 6-month follow up. In the groups moderated by experts, participants in the ABT groups lost more weight at posttreatment and follow-up evaluations ($13.17 \pm 9.50\%$ ABT versus $7.54 \pm 7.75\%$ SBT, $P = 0.01$, and $10.98 \pm 9.11\%$ ABT versus $4.83 \pm 7.54\%$ SBT, $P < 0.01$, respectively). The effect of treatment group on weight loss was significantly moderated by mood disturbance ($P = 0.02$) and susceptibility to the food environment ($P = 0.04$) and showed a trend toward significance for emotional eating and disinhibition. Post-hoc analyses showed that in participants with greater baseline depression, weight loss at follow-up was 11.18% in ABT versus 4.63% in SBT. In patients with higher disinhibition, weight loss was 8.29% in ABT versus 6.35% in SBT. Among patients with higher emotional eating, weight loss was 12.68% in ABT versus 8.21% in SBT.

Conclusion. Overall, ABT and SBT groups did not differ significantly with regard to weight loss. However, participants in the ABT groups lost and maintained more weight than those in the SBT groups when moderated by experts. Post-hoc analyses suggest that participants with mood disturbances, disinhibition, and emotional eating in the ABT intervention lost more weight than those in the SBT intervention.

Commentary

The US Preventive Services Task Force recommends that obese patients receive intensive weight management intervention [3]. Standard behavioral approaches to weight loss can produce an 8% to 10% decrease in total body weight over the course of treatment, with dropout rates less than 20%; however, many individuals return to their original weight within 5 years [4]. Additionally, these approaches may not be as effective in patients who may overeat in response to high emotional need [5–7]. Some critics of the standard behavioral approach state that it fails to suit the needs of these individuals, and hypothesize that an acceptance-based approach would better address the emotional factors that lead to poor

adherence and weight regain [8]. This study by Forman et al is noteworthy in that it represents the first randomized trial of an acceptance-based behavioral treatment for obesity when compared with SBT. Investigators also explored the potential effects of interventionist expertise and emotional variables on the treatment outcomes. While they found no significant differences in weight loss between the ABT and SBT groups, the ABT intervention resulted in greater weight loss than SBT when delivered by weight-control experts and among participants with high emotional needs.

Acceptance-based strategies, while still considered a “new generation” treatment [8], have gained traction in a range of behavior modification interventions, including studies supporting the efficacy of ABT in the management of diabetes and obesity [8,9]. A study of diabetes patients ($n = 81$) randomized to receive either a 1-day education-only program versus a 1-day education with acceptance-based strategy program (ACT) found that those who received the acceptance workshop reported better diabetes self-care and were more likely to improve their glycated hemoglobin values to the target range ($HbA_{1C} < 7\%$) at 3-month follow up [9]. Another study found that a 1-day acceptance-based intervention among obese individuals who had recently completed a weight-loss program led to improvements in quality of life measures, emotional factors, and percent weight loss (-1.5% versus $+0.3\%$, $P < 0.01$) at 3 months compared with the control group [10]. Unfortunately, these and other acceptance-based studies tested low-intensity interventions such as a single-day workshop [9], or brief food environment manipulations examining only short-term outcomes [11,12].

This study by Forman et al is a valuable contribution to the literature. In contrast to previous studies, the authors tested an intensive intervention consisting of multiple sessions, regular assessments over 40 weeks, and evaluation at 6 months follow-up. Additionally, the ABT and SBT interventions were similar in duration and intensity, and both had evidence-based components including self-monitoring [13,14] and goal setting [2,14], making it easier to speculate that differences in impact were the result of novel components of the ABT approach. This study provides evidence that ABT may be a useful model of care for obese patients with mental health-related comorbidities such as depression, emotional eating, and internal disinhibition who may therefore be challenging to treat [5,6,7].

However, there are several weaknesses as well. The authors provide little information about the setting

and where the intervention and control groups took place, making it difficult to determine whether the results reflect real-world care. Also unclear is how each interventionist's group assignment was determined and whether it was randomly assigned, or based on some quality unique to a given group. The authors do not provide information on differences in weight loss based on gender even though several previous studies have focused exclusively on women [12,15] or have had predominantly female participants [8]. Overall, the authors did not find significant weight loss differences between the 2 groups, but this is not surprising given that many of the components of the intervention groups were similar. More concerning, ABT produced statistically significant weight loss only in groups with highly trained experts. This suggests that ABT may not be scalable in light of the shortage of highly trained mental health professionals, especially in underserved [16] and rural [17] areas. More studies are needed to determine whether an effect can be shown with less-highly trained practitioners.

Applications for Clinical Practice

ABT may be a good alternative to SBT for the treatment of obesity when delivered by highly trained professionals, especially in patients with psychological and emotional comorbidities. However, further studies are necessary to determine whether successful outcomes can be obtained with less highly trained interventionists and replicated in a real-world setting.

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References

1. Brownell KD. The LEARN program for weight management. Dallas: American Health;2000.
2. Diabetes Prevention Program Coordinating Center. The Diabetes Prevention Program (DPP) description of lifestyle intervention. *Diabetes Care* 2002;25:2165–71.
3. McTigue KM, Harris R, Hemphill B, et al. Screening and interventions for obesity in adults: summary of the evidence for the U.S. Preventive Services Task Force. *Ann Intern Med* 2003;139:933–49.
4. Van Dorsten B, Lindley EM. Cognitive and behavioral ap-

- proaches in the treatment of obesity. *Med Clin North Am* 2011;95:971–88.
5. Cuntz R, Leibbrand R, Ehrig C, et al. Predictors of post-treatment weight reduction after in-patient behavioral therapy. *Int J Obes Relat Metab Disord* 2001;25 Suppl 1:S99–S101.
6. Butryn ML, Thomas JG, Lowe MR. Reductions in internal disinhibition during weight loss predict better weight loss maintenance. *Obesity (Silver Spring)* 2009 May;17:1101–3.
7. Niemeier HM, Phelan S, Fava JL, et al. Internal disinhibition predicts weight regain following weight loss and weight loss maintenance. *Obesity (Silver Spring)* 2007 Oct;15:2485–94.
8. Niemeier HM, Leahey T, Palm Reed K, et al. An acceptance-based behavioral intervention for weight loss: a pilot study. *Behav Ther* 2012;43:427–35.
9. Gregg JA, Callaghan GM, Hayes SC, et al. Improving diabetes self-management through acceptance, mindfulness, and values: a randomized controlled trial. *J Consult Clin Psychol* 2007;75:336–43.
10. Lillis J, Hayes SC, Bunting K, et al. Teaching acceptance and mindfulness to improve the lives of the obese: a preliminary test of a theoretical model. *Ann Behav Med* 2009;37:58–69.
11. Forman EM, Hoffman KL, McGrath KB, et al. A comparison of acceptance- and control-based strategies for coping with food cravings: an analog study. *Behav Res Ther* 2007;45:2372–86.
12. Forman EM, Hoffman KL, Jurascio AS, et al. Comparison of acceptance-based and standard cognitive-based coping strategies for craving sweets in overweight and obese women. *Eat Behav* 2013;14:64–8.
13. Baker RC, Kirschenbaum DS. Self-monitoring may be necessary for successful weight control. *Behav Ther* 1993;24:377–94.
14. Appel LJ, Clark JM, Yeh H, et al. Comparative effectiveness of weight-loss interventions in clinical practice. *N Engl J Med* 2011;365:1959–68.
15. Tapper K, Shaw C, Ilesley J, et al. Exploratory randomized controlled trial of a mindfulness-based weight loss intervention for women. *Appetite* 2009;52:396–404.
16. Burke BT, Miller BF, Proser M, et al. A needs-based method for estimating the behavioral health staff needs of community health centers, *BMC Health Serv Res* 2013;13:245.
17. Thomas D, Macdowell M, Glasser M. Rural mental health workforce needs assessment – a national survey. *Rural Remote Health* 2012;12:2176.

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