



## Randomized Controlled Pilot Trial of a Novel Dissonance-Based Group Treatment for Eating Disorders



Eric Stice<sup>a,\*</sup>, Paul Rohde<sup>a</sup>, Meghan Butryn<sup>b</sup>, Katharine S. Menke<sup>c</sup>, C. Nathan Marti<sup>c</sup>

<sup>a</sup> Oregon Research Institute, USA

<sup>b</sup> Drexel University, USA

<sup>c</sup> University of Texas at Austin, USA

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### ABSTRACT

The authors conducted a pilot trial of a new dissonance-based group eating disorder treatment designed to be a cost-effective front-line transdiagnostic treatment that could be more widely disseminated than extant individual or family treatments that are more expensive and difficult to deliver. Young women with a DSM-5 eating disorder ( $N = 72$ ) were randomized to an 8-week dissonance-based *Counter Attitudinal Therapy* group treatment or a usual care control condition, completing diagnostic interviews and questionnaires at pre, post, and 2-month follow-up. Intent-to-treat analyses revealed that intervention participants showed greater reductions in outcomes than usual care controls in a multivariate multilevel model ( $\chi^2[6] = 34.1, p < .001$ ), producing large effects for thin-ideal internalization ( $d = .79$ ), body dissatisfaction ( $d = 1.14$ ), and blinded interview-assessed eating disorder symptoms ( $d = .95$ ), and medium effects for dissonance regarding perpetuating the thin ideal ( $d = .65$ ) and negative affect ( $d = .55$ ). Midway through this pilot we refined engagement procedures, which was associated with increased effect sizes (e.g., the  $d$  for eating disorder symptoms increased from .51 to 2.30). This new group treatment produced large reductions in eating disorder symptoms, which is encouraging because it requires about 1/20th the therapist time necessary for extant individual and family treatments, and has the potential to provide a cost-effective and efficacious approach to reaching the majority of individuals with eating disorders who do not presently receive treatment.

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Eating disorders affect 13–15% of females (Allen, Byrne, Oddy, & Crosby, 2013; Stice, Marti, & Rohde, 2013). The fact that over 50% of individuals seeking treatment meet criteria for an eating disorder not otherwise specified (EDNOS), such as subthreshold bulimia nervosa or purging disorder (Eddy, Celio Doyle, Hoste, Herzog, & Le Grange, 2008; Fairburn & Bohn, 2005), rather than for a full threshold Diagnostic and Statistical Manual (DSM)-IV eating disorder, prompted an expansion of eating disorder diagnoses for DSM-V. Eating disorders are marked by chronicity, relapse, distress, functional impairment, and risk for future obesity, depression, suicide attempts, anxiety disorders, substance abuse, and morbidity (Crow et al., 2009; Le Grange et al., 2006; Swanson, Crow, Le Grange, Swendsen, & Merikangas, 2011). The standardized mortality ratio (observed deaths in a population/expected deaths)

is 5.9 for anorexia nervosa and 1.9 for bulimia nervosa and EDNOS (Arcelus, Mitchell, Wales, & Nielsen, 2011).

Several treatments have received empirical support relative to usual care control conditions (we focus on trials that used a similar control condition to aid cross-trial comparison). Cognitive-behavioral therapy (CBT) is effective for bulimia nervosa, producing larger pre–post reductions in symptoms ( $M d = .94$ ) and remission rates than control conditions (29–52% vs. 6–24%) (e.g., Kirkley, Schneider, Agras, & Bachman, 1985; Spielmann et al., 2013). CBT is also effective for binge eating disorder, producing larger pre–post symptom reductions ( $M d = 1.07$ ) and remission rates than control conditions (39–73% vs. 0–30%) (e.g., Grilo, Masheb, & Wilson, 2005; Peterson, Mitchell, Crow, Crosby, & Wonderlich, 2009). Family therapy for anorexia nervosa has produced small symptom reductions ( $d = .37$ ) and remission rates (14% vs. 0%) relative to usual care after 1 year (Dare, Eisler, Russell, Treasure, & Dodge, 2001).

Although eating disorders are pernicious, 80–97% of afflicted individuals do not receive treatment (Swanson et al., 2011), in part

\* Corresponding author. Oregon Research Institute, 1776 Millrace Drive, Eugene, OR, 97403, USA.

E-mail address: [estice@ori.org](mailto:estice@ori.org) (E. Stice).

because it is difficult to locate clinicians who deliver evidence-based treatments and because training is intensive and only offered at select sites (Zandberg & Wilson, 2013). For instance, training to deliver enhanced CBT takes 6 months (Fairburn et al., 2009). Thus, even those who do receive eating disorder treatment typically do not receive evidence-based interventions (Lilienfeld et al., 2013). Further, current treatments for eating disorders are very intensive, typically requiring 20 individual sessions delivered over 6 months (Wilson & Zandberg, 2012) and expensive, approximating the cost of treatment for schizophrenia (Striegel-Moore, Leslie, Petril, Garvin, & Rosenheck, 2000). The fact that treatments differ for the various eating disorders also complicates intervention delivery. These factors have hindered broad dissemination of extant eating disorder treatments, suggesting that it would be useful to develop a brief front-line treatment for the spectrum of DSM-5 eating disorders that could be easily, inexpensively, and widely disseminated.

Guided bibliotherapy for eating disorders is one solution to the paucity of clinicians who can deliver evidence-based treatments (Wilson & Zandberg, 2012). Yet, findings have been mixed, with some trials suggesting that bibliotherapy is as efficacious as alternative interventions (Grilo & Masheb, 2005; Schmidt et al., 2007; Wilson, 2010), others producing small effects (Mitchell et al., 2011; Thiels, Schmidt, Treasure, Garthe, & Troop, 1998), and still others finding virtually no effects (Steele & Wade, 2008; Walsh, Fairburn, Mickley, Sysko, & Parides, 2004). Plus, bibliotherapy has only received support for bulimia nervosa and binge eating disorder, not other eating disorders (Wilson & Zandberg, 2012).

Another limitation of extant treatments is that individuals often report continued pursuit of the thin ideal and body dissatisfaction after termination, which often leads to relapse (Bardone-Cone et al., 2010). This implies that a treatment that is effective in reducing these factors would be optimal.

It may be possible to translate the intervention theory from an effective and widely disseminated eating disorder prevention program into a new front-line treatment that could be easily and inexpensively disseminated. Although a few prevention programs have reduced eating disorder symptoms in single trials (e.g., Jones et al., 2008; McVey, Tweed, & Blackmore, 2007), more empirical support has emerged for a dissonance-based prevention program (the *Body Project*; Stice, Shaw, Burton, & Wade, 2006). In this selective prevention program young women with body image concerns voluntarily critique the thin ideal in verbal, written, and behavioral exercises (e.g., they argue the group facilitator out of pursuing this ideal in role-plays and write a letter to a younger girl about how to avoid body dissatisfaction). Criticizing the thin ideal publically theoretically reduces pursuit of the thin ideal because people seek to maintain consistency between their behaviors and attitudes. The reduced subscription to the thin ideal putatively decreases body dissatisfaction, negative affect, unhealthy weight control behaviors, eating disorder symptoms, and future eating disorder onset. Thus, this intervention targets a linchpin risk factor that is at the headwaters of a cascade of risk processes that appear to lead to eating disorders. We target young women with body dissatisfaction because it is the most robust risk factor for predicting future onset of eating disorders (e.g., Beato-Fernandez, Rodriguez-Cano, Belmonte-Llario, & Martinez-Delgado, 2004; McKnight, 2003; Stice, Marti, & Durant, 2011).

Efficacy and effectiveness trials have found that the *Body Project* produces greater reductions in risk factors (e.g., thin-ideal internalization, body dissatisfaction), eating disorder symptoms, and eating disorder onset over a 3-year follow-up than alternative interventions and assessment-only controls (Becker, Smith, & Ciao, 2005; Halliwell & Diedrichs, 2013; Matusek, Wendt, & Wiseman, 2004; Mitchell, Mazzeo, Rausch, & Cooke, 2007; Stice, Butryn,

Rohde, Shaw, & Marti, 2013; Stice, Marti, Spoor, Presnell, & Shaw, 2008; Stice, Rohde, Shaw, & Gau, 2011; Stice et al., 2006). It is the only prevention program that has reduced eating disorder onset, produced effects through 3-year follow-up, outperformed alternative interventions, and produced independently replicated effects.

In support of the intervention theory, reductions in thin-ideal internalization mediate effects of the *Body Project* on symptom reductions (Seidel, Presnell, & Rosenfield, 2009; Stice, Presnell, Gau, & Shaw, 2007) and participants assigned to high-versus low-dissonance versions of this program showed greater symptom reductions (Green, Scott, Diyankova, Gasser, & Pederson, 2005; McMillan, Stice, & Rohde, 2011). The *Body Project* produced larger effects for those with initial elevations in thin-ideal internalization (Stice, Marti, Shaw, & O'Neil, 2008), consistent with the thesis that they should experience more dissonance. The *Body Project* reduced the risk conveyed by the most potent baseline risk factor in one trial – denial of the costs of pursuing the thin ideal (Stice, Rohde, Gau, & Shaw, 2012): among participants with this risk factor, those who completed the *Body Project* showed an eating disorder incidence of 0% over 3-year follow-up versus 18% for those who completed alternative interventions and 50% for assessment-only controls. The *Body Project* also eliminated the effect of exposure to thin models on body dissatisfaction in young girls (Halliwell & Diedrichs, 2013). Further, participants who completed the *Body Project* showed a greater pre–post reduction in functional magnetic resonance imaging (fMRI) assessed caudate (a reward region) response to images of thin models and anterior cingulate (an attention region) response to thin-ideal statements relative to controls (Stice, Becker, & Yokum, 2013), implying participants may not perceive the thin ideal as a desirable goal and may allocate less attention to thin-ideal statements after completing this prevention program.

A moderator paper found that the *Body Project* produced significantly larger eating disorder symptom reductions for participants with elevated pretest symptoms (Stice, Marti, Shaw, et al., 2008), prompting us to pool data from 3 trials to test whether this program produced stronger effects for those with versus without a DSM-5 eating disorder at baseline (anorexia nervosa = 7, bulimia nervosa = 20, binge eating disorder = 23, atypical anorexia nervosa = 8, subthreshold bulimia nervosa = 12, subthreshold binge eating disorder = 10, purging disorder = 9). It produced significantly stronger pre–post symptom reductions for those with versus without an eating disorder at pretest ( $d = .71$  and  $.18$  respectively; Müller & Stice, 2013). Given that the *Body Project* has produced large clinically meaningful symptom reductions for individuals with DSM-5 eating disorders and has been widely disseminated, we developed a new dissonance-based eating disorder treatment, referred to as *Counter Attitudinal Therapy*. The present report describes a preliminary evaluation of this new dissonance-based group treatment relative to a usual-care control condition.

Several considerations guided the design of this new treatment. First, we retained the *Body Project* exercises wherein participants critique the thin ideal, which putatively creates dissonance about pursuing this unrealistic ideal, because these exercises reduce thin-ideal internalization and eating disorder symptoms. It is vital to decrease thin-ideal internalization because pursuit of this ideal predicts maintenance of eating disorder symptoms (Bohon, Stice, & Spoor, 2009; Stice & Agras, 1998) and is often a residual problem after treatment. Second, we developed new verbal, written, and behavioral exercises designed to produce dissonance about body image concerns, which also predicts eating disorder symptom maintenance (Bohon et al., 2009; Fairburn et al., 2003), and engaging in the specific eating disordered behaviors endorsed by

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