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A preliminary trial of an online dissonance-based eating disorder intervention

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ABSTRACT

Objective: We conducted a controlled randomized preliminary trial of an expanded online version of the *Body Project* (n = 46) compared to an assessment-only control condition (n = 36) via a longitudinal design (baseline, postintervention, 2-month follow-up) in a community sample of women (N = 82) with clinical (n = 53) and subclinical (n = 29) eating disorder symptoms.

Method: The traditional content of the *Body Project* was modified to include verbal, written, and behavioral exercises designed to dissuade objectification and maladaptive social comparison and adapted to an online format. Body dissatisfaction, self-esteem, self-objectification, thin-ideal internalization, maladaptive social comparison, trait anxiety, positive affect, negative affect, and eating disorder symptomatology were evaluated in the control and the online expanded *Body Project* condition at baseline, postintervention, and 2-month follow-up.

Results: A 2 (condition: online expanded *Body Project*, control) × 3 (time: baseline, postintervention, 2-month follow-up) mixed factorial multivariate analysis of variance (MANOVA) was conducted to examine statistically significant group differences. As predicted, results indicated a statistically significant condition × time interaction.

Conclusions: Participants in the expanded online *Body Project* condition showed significant reductions in eating disorder symptoms and several associated psychological risk correlates from baseline to postintervention and follow-up; contrary to predictions, eating disorder symptoms and risk correlates were not significantly lower in the online expanded *Body Project* condition compared to the waitlist control condition at postintervention or 2-month follow-up.

Eating disorders affect 10% of young women and are associated with serious medical complications and premature death (Jáuregui-Garrido & Jáuregui-Lobera, 2012; Stice, Rohde, Durant, & Shaw, 2012). Subclinical manifestations (i.e., serious symptoms that do not reach clinical levels) are even more prevalent, affecting up to 56% of adolescent women (Pernick et al., 2006). Targeted prevention and early treatment efforts are critical; the conditions become more difficult to treat as symptoms progress (Reas, Williamson, Martin, & Zucker, 2000). Effective prevention and treatment programs are essential to address this significant public health concern (Stice et al., 2012).

Efficacy data indicate the *Body Project* (Stice, Mazotti, Weibel, & Agras, 2000) produces greater reductions in subclinical eating disorder symptoms and associated risk factors than assessment-only control conditions or alternative interventions (e.g., Stice, Marti, Spoor, Presnell, & Shaw, 2008). The *Body Project* is a dissonance-based intervention (Festinger, 1954). The program consists of a series of written and behavioral interventions which prompt women to publicly denounce the thin-ideal in a voluntary way. This denunciation is at odds with their pursuit of thinness and eating disorder tendencies; the discrepancy creates psychological tension or dissonance. Participants are motivated to reduce this dissonance by developing a less favorable attitude toward the thin-ideal and reducing eating disorder behaviors.

The *Body Project* is a highly effective targeted prevention paradigm for women with subclinical eating disorder symptoms (e.g., Stice et al., 2008; Stice et al., 2012). Recently an expanded version of the *Body Project*, altered to more explicitly address maladaptive social comparison and self-objectification, reduced eating disorder symptoms among women with clinical eating disorders (Green et al., 2017a, 2017b). Findings extend the applicability of the expanded *Body Project* to the treatment realm, generalizing program utility to a broader segment of

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the eating disorder population.

Extending intervention programs to a broader segment of the population is an important step toward more widespread implementation of eating disorder interventions. A single paradigm which is efficacious for both clinical and subclinical populations is ideal given the fluidity of symptom severity (i.e., oscillations between clinical and subclinical presentations) over the duration of a typical eating disorder (Grilo et al., 2007). A broadly applicable and efficacious program also reduces the need for preprogram screening to separate clinical and subclinical groups; this allows for increased ease of program administration (Green et al., 2017a, 2017b).

Broadening the target audience represents one approach to increasing the efficacy and utility of eating disorder interventions (Romano & Hage, 2000); another approach is to modify program content to address additional risk factors (Green et al., 2017a, 2017b; Kroon Van Diest & Perez, 2013). Objectification and maladaptive social comparison are excellent candidate constructs for expanded program content in dissonance-based interventions (Green et al., 2017a, 2017b; Kroon Van Diest & Perez, 2013). The potential importance of each is discussed briefly below.

The cultural objectification of women is the tendency to reduce the social worth of women and girls to physical objects for sexual pleasure (Fredrickson & Roberts, 1997). This phenomenon is increasingly commonplace in Westernized societies (American Psychological Association, Task Force on the Sexualization of Girls, 2007). Women at risk for eating disorders are significantly more likely than asymptomatic women to internalize the cultural objectification of women and to demonstrate an enduring tendency to appraise their own self-worth from an appearance-based perspective. This tendency is referred to as trait-self objectification (Noll & Fredrickson, 1998).

Trait self-objectification has been consistently associated with disordered eating in cross-sectional research (Kroon Van Diest & Perez, 2013; Moradi & Huang, 2008; Tiggemann & Kuring, 2010; Tiggemann & Kuring, 2010). Research indicates internalization of the media thin-ideal predicts self-objectification. Self-objectification partially mediates the relationship between thin-ideal internalization and drive for thinness among eating disorder patients (Calogero, Davis, & Thompson, 2005). Findings suggest objectification plays an important role in the relationship between thin-ideal internalization and disordered eating (Calogero et al., 2005). Results indicate it may be important to explicitly address self-objectification in dissonance-based interventions which target thin-ideal internalization.

Recent findings provide additional support for this idea. Becker, Hill, Greif, Han, and Stewart (2013) found a peer-led dissonance-based prevention program reduced thin-ideal internalization and self-objectification at postintervention, 8-week, and 8-month follow-up. Kroon Van Diest and Perez (2013) found a dissonance-based program which targeted thin-ideal internalization and self-objectification significantly reduced thin-ideal internalization, self-objectification, body dissatisfaction, and eating disorder symptoms at postintervention, 5-month, and 1-year follow-up. Cross-sectional path analyses concluded self-objectification and thin-ideal internalization predicted each other; both variables predicted body dissatisfaction, and body dissatisfaction predicted eating disorder symptoms. Findings suggest objectification may be an important construct to address in dissonance-based intervention programs.

Existing research suggests social comparison may also be an important construct to address in eating disorder treatment and prevention paradigms. Social comparison refers to the process by which we compare ourselves with a target to learn information regarding our perceived social rank (Festinger, 1954). Patients with clinical and subclinical levels of disordered eating show significantly higher levels of maladaptive social comparison compared to asymptomatic controls in cross-sectional research (Corning, Krumm, & Smitham, 2006; Green et al., 2009; Harnel, Zaitsoff, Taylor, Menna, & Le Grange, 2012; Troop, Allan, Treasure, & Katzman, 2003). Maladaptive social comparison is characterized by higher overall levels of social comparison and by more frequent upward social comparisons. Upward social comparisons are made against targets perceived to be superior on the comparison attribute (i.e., comparison with thinner targets, more attractive targets, etc.).

The Social Ranking Theory of Eating Disorders (Troop et al., 2003) suggests persons with eating disorders show increased maladaptive social comparison due to low perceived social rank. Consistent with Social Ranking Theory (Troop et al., 2003), Harnel et al. (2012) demonstrated body-related maladaptive social comparison was significantly more common among adolescents with an eating disorder compared to healthy adolescents or adolescents with depressive disorder. Other research reveals a relationship between maladaptive social comparison, thin-ideal internalization, and body dissatisfaction (Myers, Ridolfi, Crowther, & Ciesla, 2012). Higher levels of maladaptive social comparison were associated with greater body dissatisfaction among women with higher levels of thin-ideal internalization (Myers et al., 2012). Findings indicate maladaptive social comparison may be an important construct to address in interventions which aim to decrease eating disorder symptoms via reductions in thin-ideal internalization.

A recent preliminary trial provided support for the inclusion of maladaptive social comparison and self-objectification in dissonance-based intervention paradigms (Green et al., 2017a, 2017b). Results indicated an expanded version of the *Body Project* (Green et al., 2017a, 2017b), adapted to more explicitly address self-objectification and maladaptive social comparison, led to significant reductions in eating disorder symptoms, psychological risk factors, and disorder-associated cardiovascular risk factors compared to a waitlist control condition in a sample of women with clinical and subclinical symptoms (Green et al., 2017a, 2017b). Effect sizes for reductions in eating disorder symptoms from pre- to postintervention were greater for the expanded *Body Project* in the trial (see Green et al., 2017b) than those exhibited by the traditional *Body Project* in previous trials (see Stice, Rohde, Gau, & Shaw, 2009; Stice, Shaw, Burton, & Wade, 2006). Findings provide further support for the inclusion of self-objectification and maladaptive social comparison in dissonance-based treatment and prevention paradigms; however, it should be noted the efficacy of the expanded *Body Project* has not been directly compared to the traditional *Body Project*.

Another key consideration in eating disorder intervention efficacy is program accessibility; recent data indicate accessibility to effective and affordable programs remains a paramount concern (Stice et al., 2012). A high percentage of eating disorder suffers do not seek services due to perceived treatment barriers, including high financial costs, lack of insurance, and feelings of shame (Cachelin, Rebeck, Veisel, & Striegel-Moore, 2001); targeted prevention programs may not be widely implemented due to cost and staffing considerations (Stice et al., 2012). Online programs may address these concerns, theoretically offering a readily accessible platform to facilitate the cost-effective, widespread dissemination of effective treatment and targeted prevention programming (Stice et al., 2012).

Preliminary data indicate the *eBody Project*, an online version of the *Body Project*, demonstrated promising outcomes in this regard (Stice et al., 2012). Data indicate the *eBody Project* was as effective as the traditional face-to-face *Body Project* in reducing eating disorder symptoms and associated risk correlates among female college students with body dissatisfaction (Stice et al., 2012). Results suggest the *eBody Project* may be a highly accessible, cost-effective way to deliver targeted prevention services; however, treatment efficacy of the online paradigm for women with clinical eating disorder symptoms has not yet been demonstrated. It is important to investigate whether an online version of the *Body Project* demonstrates efficacy with clinical populations in order to explore potential treatment applications.

Findings of Green et al. (2017a, 2017b) suggest the expanded *Body Project* program, which explicitly addresses objectification and maladaptive social comparison, was effective in reducing eating disorder