



# Body dissatisfaction predicts poor behavioral weight loss treatment adherence in overweight Mexican American women



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## ABSTRACT

Poor adherence poses a major barrier to the success of behavioral weight loss (BWL) programs, particularly for overweight Mexican American women. Given the high prevalence and costs of overweight/obesity, factors that contribute to attendance and adherence problems should be identified, especially in ethnic minority populations. The current study examined the role of pre-treatment body dissatisfaction and depression in predicting attendance and adherence in a BWL intervention. Ninety-nine overweight/obese Mexican American women enrolled in the intervention and completed baseline measures. Eighty-one of the women attended at least one treatment session and provided measures of dietary and physical activity adherence. Simultaneous linear regression analyses suggested that although higher levels of body dissatisfaction and depression each played unique roles in predicting poorer attendance, only body dissatisfaction predicted adherence. Specifically, higher body dissatisfaction predicted poorer treatment adherence. Findings highlight the importance of addressing body dissatisfaction early in BWL treatment to increase attendance and adherence.

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## 1. Introduction

Nearly 67% of women in the United States are overweight, and 37% of this subgroup is obese (Yang & Colditz, 2015). Overweight and obesity are associated with certain medical conditions, and women have a greater relative risk of some of these co-morbidities (i.e., type 2 diabetes, coronary artery disease) compared to men (Guh et al., 2009; National Institutes of Health, 2000). There is also an increased risk of breast, endometrial, and ovarian cancer in overweight and obese women compared to average weight women (Guh et al., 2009). Overall, excess weight and associated co-morbidities result in increased mortality and a substantial public health concern (Borrell & Samuel, 2014; Lehnert, Sonntag, Konnopka, Riedel-Heller, & König, 2013).

Women are more likely than men to perceive themselves as overweight/obese, experience greater dissatisfaction with weight, and engage in more weight loss attempts (Cash & Hicks, 1990; Fiske, Fallon, Blissmer, & Redding, 2014; Yaemsiri, Slining, & Agarwal, 2011). In fact, approximately 75% of overweight/obese women report weight control attempts in the prior year (Yaemsiri et al., 2011). Yet many of these attempts appear unsuccessful, as approximately 50% of participants enrolled in behavioral weight loss (BWL)

interventions return to their baseline weight within five years. Furthermore, dieting can even predict future weight gain (Lowe, Doshi, Katterman, & Feig, 2013; Wadden, Butryn, & Byrne, 2004).

BWL interventions have been widely tested and demonstrate positive outcomes for individuals that continue to attend and adhere to the intervention (Alhassan, Kim, Bersamin, King, & Gardner, 2008; Anderson, Konz, Frederick, & Wood, 2001; Dansinger, Gleason, Griffith, Selker, & Schaefer, 2005; Franz et al., 2007). Many studies of weight loss outcomes, however, do not include measures of adherence (Lemstra, Bird, Nwankwo, Rogers, & Moraros, 2016). When incorporated, measures of adherence have varied widely. Examples include caloric intake (Alhassan et al., 2008), fruit/vegetable consumption (Anton, Perri, & Riley, 2000), self-assessments of dietary adherence (Dansinger et al., 2005), and amount of time spent exercising (Kruger, Lee, Ainsworth, & Macera, 2008). Nonetheless, adherence overall appears to be a highly influential factor in BWL intervention efficacy. For example, in a study comparing four popular diet approaches, adherence to any approach predicted better outcome than any specific diet strategy (Dansinger et al., 2005). Considering the consequences and variable outcomes for those who enroll in BWL interventions, researchers have searched for factors that predict attendance and adherence. Numerous factors have been implicated, but the definitiveness of these conclusions is limited due to the small number of studies, the high variability in both definitions of adherence and assessment measures for the construct, conflicting results, and high correlations between predictors (Lemstra et al., 2016).

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The current study primarily was interested in the role of two of these predictors, body dissatisfaction and depression, in predicting attendance and adherence in BWL treatment. Psychological predictors were the focus because there is evidence to suggest that they are better predictors of BWL treatment adherence compared to demographic factors (Moroshko, Brennan, & O'Brien, 2011). The attitudinal/evaluative aspect of body image; namely, body dissatisfaction (Cash & Pruzinsky, 2002; Jakatdar, Cash, & Engle, 2006), was examined along with depression given their high co-occurrence with overweight and obesity (Luppino et al., 2010; Schwartz & Brownell, 2004), and research suggesting their potentially detrimental effects on BWL efficacy (Teixeira, Going, Sardinha, & Lohman, 2005; Wing, Phelan, & Tate, 2002). Since brief interventions exist for both variables (Cash, 2008; Lewinsohn, Biglan, & Zeiss, 1976), these interventions possibly could be incorporated into the existing BWL treatments, if indicated, in an effort to increase attendance and adherence.

### 1.1. Potential contributions of body dissatisfaction and depression

Previous research has demonstrated that body dissatisfaction and depression are associated with BWL intervention efficacy. Several studies have found that body dissatisfaction is related to decreased BWL efficacy (Elfhag & Rössner, 2010; Kiernan, King, Kraemer, Stefanick, & Killen, 1998; Teixeira et al., 2002, 2006), yet other research indicates that body dissatisfaction actually increases BWL efficacy (Traverso, Ravera, Lagattolla, Testa, & Adami, 2000). There is limited prior research regarding body dissatisfaction and attendance and adherence variables, but body dissatisfaction generally is associated with less physical activity (Kruger et al., 2008) and less healthful eating (Anton et al., 2000). Similarly, Gagnon-Girouard et al. (2009) found that body dissatisfaction was associated with overeating in a sample of weight preoccupied women. Thus, there seems to be an association between body dissatisfaction and important behavior changes associated with BWL efficacy. The current study provides a direct test of body dissatisfaction on attendance and adherence in a standard BWL intervention for Mexican American women.

Regarding depression, considerable research has shown that higher depression scores are associated with decreased adherence to health care interventions (see Wing et al., 2002). Specifically, higher depressive symptomatology has been associated with poorer adherence to dietary and exercise interventions (Ciechanowski, Katon, & Russo, 2000; Ziegelstein et al., 2000) and diabetes self-care regimens (McKellar, Humphreys, & Piette, 2004). Yet the relationship between depression and adherence is not unidirectional. Depression symptoms and adherence reciprocally influence one another, such that depression increases non-adherence and adherence lessens depression (Wing et al., 2002).

To further complicate the issue, body dissatisfaction and depression are highly correlated constructs, which makes it difficult to ascertain which psychological variable accounts for the most variance in BWL efficacy (Joiner, Wonderlich, Metalsky, & Schmidt, 1995; Keel, Mitchell, Davis, & Crow, 2001). Studies have not routinely assessed their contributions to BWL outcomes simultaneously. These clarifications are particularly important in identifying individuals at risk of failure in BWL interventions, and for driving treatment recommendations.

### 1.2. Attendance and adherence problems in Mexican American and Hispanic/Latino women

Another poorly understood aspect of the overweight-obesity epidemic is the disparity in prevalence and consequences between ethnic and racial groups, specifically Hispanics/Latinos and non-

Hispanic Whites (Wang & Beydoun, 2007). Hispanics/Latinos, particularly Mexican American women, display higher rates of overweight and obesity than non-Hispanic Whites (Ogden, Carroll, Fryer, & Flegal, 2015), and have a higher prevalence of diabetes and cardiovascular risk factors (Caballero, 2007; Mitchell, Stern, Haffner, Hazuda, & Patterson, 1990). Current BWL interventions consistently are less effective for Hispanic participants (Lindberg & Stevens, 2007; Weiss, Galuska, Khan, Gillepse, & Serdula, 2007). More generally, racial and ethnic minorities report lower adherence to dietary and physical activity recommendations compared to non-Hispanic Whites (Baker, Schootman, Barnidge, & Kelly, 2006; Kirkpatrick, Dodd, Reedy, & Krebs-Smith, 2012; Zhao, Ford, Li, & Mokdad, 2008). Several studies have sought to address this disparity over the years by creating culturally-adapted weight loss and health behavior interventions (Corsino et al., 2012; Foreyt, Ramirez, & Cousins, 1991; Lindberg et al., 2012; Pekmezci et al., 2009; Rocha-Goldberg et al., 2010), but many of these interventions still exhibited low attendance (Corsino et al., 2012) and low rates of adherence to dietary (Parikh et al., 2010) and exercise recommendations (Keller & Cantue, 2008; Poston et al., 2001). The current body of literature on attendance and adherence to weight loss interventions among Hispanics is limited, and no study appears to have specifically examined predictors of attendance and adherence to a standard BWL intervention in Hispanic women. Using pre-treatment predictors to examine adherence to a BWL intervention, rather than attrition or weight loss, may provide a more nuanced understanding of BWL efficacy. This may be particularly important in ethnic minority populations that consistently have decreased weight loss outcomes (Wadden et al., 2009).

### 1.3. The current study

Considering the lack of efficacy of culturally adapting BWL treatments for Hispanic populations, it appeared worthwhile to investigate the effects of psychological factors, specifically depression and body dissatisfaction, on adherence and attendance. Most previous studies demonstrating associations between depression, body dissatisfaction, and BWL attendance and adherence used non-Hispanic White samples or they did not specify the ethnic/racial make-up of the sample. Thus, there is some question about whether these results generalize to Hispanic women. Understanding these factors may be of particular significance given the similar rates of body dissatisfaction (Shaw, Ramirez, Trost, Randall, & Stice, 2004) and the higher rates of depression among Hispanic women compared to non-Hispanic White women (Kessler et al., 2003).

The current study examined the role of body dissatisfaction and depression in attendance and adherence for Mexican American women enrolled in a BWL intervention. Despite some inconsistencies in the literature, we hypothesized that higher levels of body dissatisfaction and depression would be associated with poorer treatment attendance and adherence. Studies have not examined the relative contributions of depression and body dissatisfaction in BWL intervention attendance and adherence in a Mexican American sample. Still, research has suggested that body dissatisfaction is the most consistent source of psychological distress among those with overweight/obesity (Rosen, 1996). Body dissatisfaction often precedes or exacerbates depressive symptoms, as suggested in the dual pathway model by Stice (2002). Previous work has found support for this model among an obese patient population (Wardle, Waller, & Rapoport, 2001). Thus, we hypothesized that when body dissatisfaction and depression were considered simultaneously as predictors of attendance and adherence, body dissatisfaction would be a more consistent predictor.

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