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Associations between weight suppression and dimensions of eating disorder psychopathology in a multisite sample

Jason M. Lavender [a, b, *], Jena A. Shaw [c], Ross D. Crosby [a, b], Emily H. Feig [c], James E. Mitchell [a, b], Scott J. Crow [d, e], Laura Hill [f], Daniel Le Grange [g], Pauline Powers [h], Michael R. Lowe [c]

[a] Neuropsychiatric Research Institute, Fargo, ND, USA
[b] University of North Dakota School of Medicine and Health Sciences, Fargo, ND, USA
[c] Drexel University, Philadelphia, PA, USA
[d] University of Minnesota, Minneapolis, MN, USA
[e] The Emily Program, St. Paul, MN, USA
[f] The Center for Balanced Living, Columbus, OH, USA
[g] University of California, San Francisco, San Francisco, CA, USA
[h] University of South Florida, Tampa, FL, USA

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ABSTRACT

Evidence suggests that weight suppression, the difference between an individual's highest historical body weight and current body weight, may play a role in the etiology and/or maintenance of eating disorders (EDs), and may also impact ED treatment. However, there are limited findings regarding the association between weight suppression and dimensions of ED psychopathology, particularly in multi-diagnostic ED samples. Participants were 1748 adults (94% female) from five sites with a variety of DSM-IV ED diagnoses who completed the Eating Disorder Questionnaire, a self-report measure of various attitudinal, behavioral, and medical features of EDs. Four factor analytically derived dimensions of ED psychopathology were examined: (a) weight/shape concerns, (b) binge eating/vomiting, (c) exercise/restrictive eating behaviors, and (d) weight control medication use. Hierarchical regression analyses were conducted to examine the unique association of weight suppression with each dimension (controlling for ED diagnosis and BMI), as well as the independent unique associations of three interactions: (a) weight suppression × BMI, (b) weight suppression × ED diagnosis, and (c) BMI × ED diagnosis. Results revealed that weight suppression was uniquely associated with all of the ED psychopathology dimensions except binge eating/vomiting. The weight suppression × BMI interaction was significant only for weight/shape concerns, whereas the weight suppression × ED diagnosis was not significant for any of the dimensions. Significant BMI × ED diagnosis interactions were found for all dimensions except weight/shape concerns. Overall, the current results support the salience of weight suppression across multiple dimensions of ED psychopathology, with the exception of binge eating/vomiting.

Weight suppression, a variable reflecting the degree to which individuals' current weights are lower than their historical highest weights (i.e., highest lifetime weight minus current weight), has received increasing attention in the eating disorder (ED) literature. Findings from previous studies have shown that greater weight suppression (i.e., larger discrepancy between highest and current weight) is associated with: (a) maintenance and onset of BN symptoms over the long term in college men and women (Keel and Heatherton, 2010); (b) weight gain over the short term (i.e., during treatment) and long term in non-clinical (Stice et al., 2011) and ED samples (Herzog et al., 2010; Lowe, et al., 2006a; Lowe, et al., 2006b; Wildes and Marcus, 2012; Witt et al., 2014); (c) longer time to ED recovery (Lowe et al., 2011); and (d) maintenance of bulimic symptoms following bulimia nervosa (BN) treatment (Butryn et al., 2006) and anorexia nervosa (AN) treatment (Wildes and Marcus, 2012; Witt et al., 2014). However, not all studies have

* Corresponding author. Neuropsychiatric Research Institute, 120 South 8th Street, Fargo, ND 58103, USA.
E-mail address: jlavender@nrifargo.com (J.M. Lavender).

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found weight suppression to be a significant predictor of ED symptoms and/or treatment outcome variables (e.g., Carter et al., 2008; Dawkins et al., 2013; Van Son et al., 2013; Zunker et al., 2011). More recently, research has begun to examine interactions between weight suppression and other relevant variables (e.g., body mass index [BMI]) in relation to various aspects of ED psychopathology and/or treatment outcome, with mixed support for such interactions (e.g., Berner et al., 2013; Butryn et al., 2011; Dawkins et al., 2013; Witt et al., 2014).

From a conceptual perspective, weight suppression has been theorized to be an important factor in ED psychopathology for several reasons. With regard to treatment, findings suggesting that greater weight suppression predicts weight gain during treatment of both AN and BN are of importance because of the potentially problematic reactions that patients who already have extensive weight/shape concerns may experience in response to weight gain. Further, from the perspective of ED maintenance or onset, the behaviors that are necessary to maintain a suppressed weight over time (e.g., dieting, exercise, etc.) could become increasingly extreme (i.e., compensatory behaviors), which may promote the development or maintenance of binge eating behaviors (Butryn et al., 2011). Binge eating in turn may promote more extensive restrictive behaviors, potentially leading to an escalating cycle of binge eating and compensatory behaviors.

There is thus both theoretical and empirical support for weight suppression as a potentially salient variable in the etiology, maintenance, and/or treatment of EDs. However, not all studies have found weight suppression to be a significant predictor variable, suggesting the possibility that other variables may interact with weight suppression in relation to various ED psychopathology dimensions. In particular, two variables of theoretical relevance are current BMI, a variable which is typically minimally associated with weight suppression (e.g., Berner et al., 2013; Butryn et al., 2011; Keel and Heatherton, 2010), and ED diagnosis, which is relevant in light of the expected differences in weight suppression given typical presentations characterizing EDs (i.e., underweight in AN, normal weight in BN, overweight in binge eating disorder [BED]). As such, examining the extent to which weight suppression may interact with these other variables in predicting important dimensions of ED psychopathology would be a useful addition to the existing literature.

To date, much of the research examining the role of weight suppression in EDs has been conducted in samples of individuals with BN, although more recently investigations have also examined weight suppression in other ED groups (Berner et al., 2013; Wildes and Marcus, 2012; Witt et al., 2014; Zunker et al., 2011). However, there remains limited research on the role of weight suppression across EDs, as well as potential interactions between weight suppression and other theoretically relevant variables. The primary purpose of the current study was to examine the association between weight suppression and dimensions of ED psychopathology in a multi-diagnostic ED sample. More specifically, the aims included (a) examining whether weight suppression accounts for significant variance in ED psychopathology dimensions when controlling for ED diagnosis and BMI, and (b) examining whether interactions among these variables (i.e., weight suppression and BMI, weight suppression and ED diagnosis, BMI and ED diagnosis) independently account for additional significant variance in the ED dimensions. From a comprehensive measure of ED psychopathology, four factor analytically derived dimensions were selected to reflect the broad range of symptoms characterizing ED psychopathology: weight/shape concerns, binge eating/vomiting, exercise/restrictive eating behaviors, and use of weight control medications. Given previous research described above, it was hypothesized that weight suppression would be uniquely associated with each of the ED psychopathology dimensions. Given the limited prior research on the interactions between these variables in relation to ED symptoms, testing of the interactions was considered exploratory and no specific hypotheses were made.

1. Method

1.1. Participants

Participants in this investigation were 1748 adults (94.3% female; 90.0% Caucasian; mean age = 28.8 ± 9.7 years) with a variety of ED presentations who completed surveys at five sites: the University of Minnesota (Minneapolis, MN; $n = 1165$), the Neuropsychiatric Research Institute (Fargo, ND; $n = 221$), the University of South Florida (Tampa, FL; $n = 43$), The Center for Balanced Living (Columbus, OH; $n = 290$), and the University of Chicago (Chicago, IL; $n = 29$). With regard to DSM-IV ED diagnoses, the breakdown of the sample was as follows: AN = 276 (15.8%), BN = 758 (43.4%), BED = 185 (10.6%), Eating Disorder Not Otherwise Specified (EDNOS) = 529 (30.3%).

1.2. Procedure

Participants were recruited from ED research/treatment facilities (the five sites noted above) and completed a questionnaire assessing ED psychopathology and related demographic and clinical characteristics, which was typically offered in the weeks prior to or at the time of their initial evaluation. All participants provided informed consent prior to completing the measure. The measure was completed independently of other data collected as part of participants' clinical care (i.e., questionnaire data collected as part of this research was not linked to other clinical data). Each of the sites at which data collection occurred had Institutional Review Board approval.

1.3. Measure

The Eating Disorders Questionnaire (EDQ; Mitchell et al., 1985) is a self-report questionnaire comprised of multiple modules assessing a variety of domains relevant to current and lifetime history of ED psychopathology. Although the EDQ was not designed as a diagnostic instrument, algorithms have been developed to approximate DSM-IV ED diagnoses using EDQ items. These algorithms were used in the current investigation to assign participants diagnoses of AN, BN, BED, or EDNOS. The EDQ has demonstrated reasonable concordance with ED diagnoses obtained via standard structured interviews (kappa = .64; Keel et al., 2002), as well as with several subscales of Fairburn and Beglin's (1994) Eating Disorder Examination-Questionnaire (kappas = .64–.80; Eddy et al., 2009).

In the present study, data were drawn from modules assessing weight history and weight control behaviors. In the weight history module, participants were asked to report their current height and weight, as well as their highest adult (non-pregnancy) weight and highest adolescent weight. This information was then used to derive (a) the weight suppression variable, calculated as the difference between a participant's highest weight ever and current weight, and (b) the BMI variable, calculated based on the participant's self-reported current height and weight. Additional items from the weight history module assessed attitudes related to weight and shape (e.g., “How much do you fear gaining weight?”; “How important is your weight and shape in affecting how you feel about yourself as a person?”). Participants responded to these items on a Likert-type scale ranging from 1 (not at all) to 5 (extremely). The remaining items used in the current investigation were drawn