Experimental evidence that changes in mood cause changes in body dissatisfaction among undergraduate women

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ABSTRACT

Previous research has found concurrent and prospective associations between negative mood and body dissatisfaction; however, only experimental research can establish causal relationships. This study utilized an experimental design to examine the influence of negative mood on body dissatisfaction. Undergraduate women were randomly assigned to an experimental or control condition. Participants in the experimental condition (n = 21) completed a negative mood induction procedure. Participants in the control condition (n = 24) completed a neutral mood procedure. All participants completed visual analog scales regarding their mood and satisfaction with weight and shape before and after each manipulation. Body dissatisfaction increased following the procedure for experimental but not control participants, suggesting that negative mood causes increased body dissatisfaction. In cultures that idealize thinness, body dissatisfaction may arise from funneling general feelings of dysphoria into more concrete and culturally meaningful negative feelings about the body.

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Introduction

Negative affect is a prospective risk factor for the development of eating disorders (Stice, 2002). Further, acute increases in negative affect appear to be a trigger for binge eating among women with bulimia nervosa and binge eating disorder (Haedt-Matt & Keel, 2011). Thus, negative mood has both distal and proximal significance in disordered eating. Similarly, body dissatisfaction predicts the development of a variety of negative consequences, particularly eating pathology (Johnson & Wardle, 2005; Stice, 2002). However, little is known about the causal relationship between these two risk factors. The purpose of this study was to examine the influence of negative mood on body dissatisfaction.

Body dissatisfaction and negative mood consistently show positive associations in clinical (e.g., Dunkley, Masheb, & Grilo, 2010) and non-clinical samples of women (e.g., Johnson & Wardle, 2005; Santos, Richards, & Bleckley, 2007). Although a large body of research suggests that body dissatisfaction contributes to negative mood, depression also has been supported as a prospective risk and maintenance factor for body dissatisfaction in longitudinal studies (Bearman, Presnell, Martinez, & Stice, 2006; Keel, Mitchell, Davis, & Crow, 2001). Thus, some researchers have proposed a model in which negative mood increases body dissatisfaction (Griffiths & McCabe, 2000; Keel et al., 2001; Tylka & Subich, 2004). Keel et al. (2001) theorized that depression may cause body dissatisfaction because general negative feelings are funneled into negative feelings about body shape and weight in cultures that idealize thinness. Expanding on earlier theoretical models, Tylka and Subich (2004) posited that negative affect contributes to body image disturbance because women who experience negative affect are more likely to internalize the thin ideal and generalize negative feelings toward their bodies. Supporting these proposals, research has found that negative affect and self-esteem are unique predictors of variance in body image (Griffiths & McCabe, 2000; Tylka & Subich, 2004). If negative mood increases body dissatisfaction, we would expect changes in negative mood to precede changes in body dissatisfaction. However, correlational and longitudinal findings cannot establish whether acute changes in mood cause acute changes in body dissatisfaction.
Previous research has used experimental methods to successfully manipulate mood and body satisfaction in non-clinical samples of women. Negative mood inductions led to increases in body dissatisfaction in some (Baker, Williamson, & Sylve, 1995; Cohen-Tovée, 1993; Taylor & Cooper, 1992) but not all studies (Carter, Bulik, Lawson, Sullivan, & Wilson, 1996). Conflicting results may be due to limitations of this literature, including small sample size (N = 15; Carter et al., 1996), no control condition for comparison (Cohen-Tovée, 1993), and lack of an immediate pre-induction assessment of mood and body dissatisfaction (Baker et al., 1995).

Thus, methodological limitations constrain the conclusions that can be drawn from existing experimental studies. The present study sought to examine causal relationships between mood and body dissatisfaction in a non-clinical sample utilizing a controlled experimental design with repeated assessments to evaluate changes in mood and body dissatisfaction as a consequence of negative mood induction procedures. We hypothesized that experimentally induced increases in negative mood would cause increases in body dissatisfaction.

Method

Participants

Participants were 45 female undergraduates recruited through campus advertisements. Eligible participants were between 18 and 25 years old, had a body mass index (BMI) in the normal range (19–24 kg/m²), and reported no prior or current eating disorder during a screening interview that covered lifetime history of eating disorder symptoms. Mean (SD) age and BMI were 20.03 (1.78) years and 21.68 (1.71) kg/m², respectively. The sample was predominantly Caucasian (90.5%). Participants were paid $10 for their participation. This research was reviewed and approved by an institutional review board.

Measures

Participants completed demographic and self-report questionnaires on a separate day as part of a larger study examining factors that influence body image. Measures included global ratings of depression, body dissatisfaction, and eating pathology and were completed within one week of their participation in the current study. In addition, participants completed assessments of their current mood, body shape satisfaction, and weight satisfaction immediately before and after experimental procedures using three visual analog scales.

Beck Depression Inventory (BDI). This 21-item scale is a widely used measure of depressive symptoms (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961). Cronbach’s alpha in this study was .92.

Eating Attitudes Test-26 (EAT-26). This 26-item measure assesses features commonly present in individuals with anorexia nervosa (Garner, Olmsted, Bohr, & Garfinkel, 1982). Using a scale that ranges from 1 (never) to 6 (always), participants rate how often they engage in certain thoughts and behaviors such as, “I like my stomach to be empty” and “I am terrified about being overweight.” Although Garner et al. (1982) recommended recoding items into a 0–3 rating system, item values in the current study were summed using a continuous 1–6 rating system to counter lower variability in a non-clinical sample. Cronbach’s alpha for the current sample was .92.

Body Dissatisfaction Subscale of the EDI (EDI-BD). This 9-item scale measures the belief that certain body parts are too large (Garner, Olmstead, & Polivy, 1983). Because of greater sensitivity in a nonclinical population, original item values ranging from 1 to 6 (rather than recoded items) were summed to calculate a score on this measure. Cronbach’s alpha for the current sample was .92.

Bulimia Test-Revised (BULIT-R). This 36-item scale assesses bulimic symptoms. The BULIT-R has demonstrated good predictive ability for bulimia nervosa (Theelen, Farmer, Wonderlich, & Smith, 1991). Cronbach’s alpha for the current sample was .96.

Visual Analog Scales (VAS). Participants’ current mood, body shape satisfaction, and weight satisfaction were evaluated immediately before and after the experimental/control procedure using three VAS. To assess mood, participants were asked, “How are you feeling right now?” with response anchors of “Extremely Unhappy” on the left end versus “Extremely Happy” on the right end. To assess weight and body shape satisfaction, participants were asked, “How do you feel about your weight right now?” and “How do you feel about your body shape right now?” with response anchors of “Extremely Unsatisfied” at the left end and “Extremely Satisfied” at the right end. These horizontal scales were 100 mm long, and participants were instructed to make one vertical mark on each line to indicate their current state. Scores were calculated by measuring the distance in millimeters from the left end of the scale to the participant’s mark. Changes in VAS scores were used to evaluate changes in mood, body shape satisfaction, and weight satisfaction. VAS scores measuring satisfaction with body weight and appearance have correlated highly with the EDI-BD, demonstrating good construct validity (Heinberg & Thompson, 1995).

Procedure

Participants were told that the purpose of this study was to investigate body image. After providing informed consent, participants were randomly assigned by a coin toss into either the experimental (n = 21) or control condition (n = 24).

Similar to methods successfully implemented by Cohen-Tovée (1993), the current study used Clark’s (1983) musical mood induction method to induce a temporary increase in negative affect in the experimental group and no mood change in the control group. After completing the pre-induction VAS, participants in the experimental group received the following written instructions: “Please try to get into a sad mood. Both the statements on the cards and the music are designed to help you get into that mood. Read the statements to yourself and try to think that they are true for you.” Participants then listened to an excerpt from Gabriel Faur Fauré’s “Requiem” (Op. 48, part one, “Introit et Kyrie”) while viewing ten printed self-statements with negative connotations, such as “I have been dishonest” and “I do not have any true friends.” Importantly, none of the negative self-statements were related to body shape or weight.

Participants in the control group completed the pre-induction VAS and then received the following written instructions: “Please read the following statements and think about a time when you’ve observed or experienced the events described in the statements.” Control participants viewed cards with neutral statements, such as “In the mountains, the air is fresh” and “Leaves change color in the fall,” while listening to an excerpt from Antonin Dvorák’s “Slavonic Dances” (Op. 46, No. 1 in C major & Op. 72, No. 7 in C major). None of the neutral statements were self-statements.

Musical excerpts for both control and experimental groups were approximately 10 min long. After the music was finished, the study administrator turned off the tape and participants completed the post-induction VAS without discussion. For both conditions, the study administrator maintained a neutral affect so as not to influence participants’ responses.
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