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The role of disordered eating cognition and body image flexibility in disordered eating behavior in college men

Akihiko Masuda*, Mary L. Hill, Erin C. Tully, Sarah E. Garcia

Department of Psychology, Georgia State University, Atlanta, GA 30303, USA

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ABSTRACT

Research has documented a recent rise in endorsement of disordered eating behavior in men. Following some cognitive behavior therapy (CBT) models of disordered eating, the present cross-sectional study investigated whether disordered eating cognition and body image flexibility are associated with disordered eating behavior and whether the effect of body mass index (BMI) on disordered eating behavior is due to the effect of BMI on lower levels of body image flexibility and higher levels of disordered eating cognitions. Participants included 237 male college students, ages 17–50 years old. Results revealed large indirect effects of BMI on disordered eating behavior through disordered eating cognition and diminished body image flexibility. These findings suggest a central role of maladaptive cognitions and regulation processes in disordered eating behavior in men, and future research should test if these cognitions and regulation processes predict onset, recurrence, and/or maintenance of the disordered eating behaviors.

1. Introduction

Men in the United States have increasingly endorsed disordered eating symptoms in recent years (Greenberg & Schoen, 2008; Grossbard, Atkins, Geisner, & Larimer, 2013; Jones & Morgan, 2010; Locker, Heesacker, & Baker, 2012; Striegel-Moore et al. 2009). Although evidence remains limited, this increasing trend is theorized to be partially attributable to growing sociocultural pressures that promote unrealistic expectation of ideal male body image and muscularity. In research, these sociocultural factors are often conceptualized and measured as disordered eating cognitions, body image investment, body image evaluation, and muscle dysmorphia (Juarez, Soto, & Pritchard, 2012; Pritchard, 2014; Weltzin, Cornella-Carlson, Fitzpatrick, Kennington, Bean, & Jefferies, 2012). Sexuality has also been shown to be a predictor of disordered eating in men, with homosexual and bisexual men endorsing more body image concerns and disordered eating (Boisvert & Harrell, 2009; Bosley, 2011).

While fewer men meet diagnostic criteria for eating disorders than women (Hudson, Hiripi, Pope, & Kessler, 2007), many report disordered eating symptoms, such as excessive dieting, body dissatisfaction, binge eating, and compensatory behaviors (Striegel-Moore et al., 2009). For example, in a sample of 1808 men (aged 18–35 years), who were randomly selected from a health maintenance organization, 8% endorsed binge eating at least once per week, 4% endorsed fasting, and 3% endorsed using laxatives as a means of weight control (Striegel-Moore et al., 2009). Disordered eating behaviors are of great clinical concern because they are often linked to severe psychopathology (Miller, Vaillancourt, & Hanna, 2009).

1.1. Cognitive behavioral models of disordered eating behavior

Cognitive behavior therapies (CBTs) constitute a group of empirically informed interventions designed to promote greater behavior adaptation (Herbert & Forman, 2013; Mennin, Ellard, Fresco, & Gross, 2013). To date, there are several CBT models of disordered eating, including, but not limited to, conventional cognitive therapies (Cooper, 1997), enhanced CBT for eating disorders (Cooper & Fairburn, 2011; Fairburn, 2008; Fairburn, Cooper, & Shafran, 2003), dialectical behavior therapy (Safer, Telch, & Chen, 2009), and acceptance and commitment therapy (Hayes, Strosahl, & Wilson, 2012). Although varying in foci, these models generally view disordered eating cognition as a major contributor to the onset and maintenance of disordered eating behavior. Disordered eating cognition in the present study refers to a set of thoughts concerning the fear of gaining weight, importance of having an ideal weight and shape to be interpersonally accepted, and self-control over diet and weight (Mizes, Christiano, Madison, Post, Seime, & Varnado, 2000). These cognitions were found to be positively associated with disordered eating behaviors in a sample of college men and women (Masuda, Price, & Latzman, 2012) as

* Corresponding author.
E-mail address: amasuda@gsu.edu (A. Masuda).

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well as a sample of college men (Lavender & Anderson, 2010; Lavender, Gratz, & Anderson, 2012). Additionally, a positive association between body mass index (BMI) and disordered eating cognition has been reported in a sample of college men (Lavender, Gratz, et al., 2012).

Some CBT models of disordered eating postulate that emotion and behavior regulation processes also contribute to the onset and maintenance of eating pathology (Hayaki, 2009; Masuda & Hill, 2013; Merwin, 2011; Merwin, Timko, Moskovich, Ingle, Bulik, & Zucker, 2011; Polivy & Herman, 2002; Safer et al., 2009). Emotion and behavior regulation abilities can be roughly defined as the processes by which an individual interprets, relates, and reacts to internal events, including emotions (Gross, 2002; Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). Research shows that maladaptive regulation processes, such as rumination, experiential avoidance, and thought suppression, are positively associated with disordered eating symptoms in samples of college men and women combined (Aldao & Nolen-Hoeksema, 2010; Aldao, Nolen-Hoeksema, & Schweizer, 2010; Lavender, Jardin, & Anderson, 2009; Rawal, Park, & Williams, 2010) as well as in samples of college men (Lavender & Anderson, 2010; Lavender, Anderson, & Gratz, 2012). Similarly, a recent cross-sectional study with a sample of Italian college men found mood intolerance, a salient example of maladaptive regulation ability, to be directly linked to disordered eating symptoms (Dakanalis, Timko, Clerici, Zanetti, & Riva, 2014). Conversely, adaptive regulation strategies, such as mindfulness and acceptance, are negatively associated with disordered eating symptoms in both men and women (Baer, Fischer, & Huss, 2005; Lavender et al., 2009; Masuda, Hill, & Tone, 2012; Masuda, Price, et al., 2012).

1.2. Body image flexibility model

Of the different emotion and behavior regulation processes, body image flexibility (Ferreira, Pinto-Gouveia, & Duarte, 2011; Sandoz, Wilson, Merwin, & Kellum, 2013) is particularly relevant to the context of body dissatisfaction and disordered eating. Body image flexibility has been defined as an adaptive regulation ability to experience body dissatisfaction and other related internal experiences openly, when doing so promotes values-consistent living (Sandoz et al., 2013). A growing body of evidence has demonstrated that body image flexibility is negatively associated with body dissatisfaction in a group of college men and women (Sandoz et al., 2013) as well as in groups of women (Hill, Masuda, & Latzman, 2013; Webb, Butler-Ajibade, & Robinson, 2014).

Relevant to the present study, body image flexibility is found to be related to, but distinct from disordered eating cognition (Wendell, Masuda, & Le, 2012) and body dissatisfaction (Sandoz et al., 2013), and it accounts for unique valiance in disordered eating symptoms (Sandoz et al., 2013). Additionally, body image flexibility and BMI were negatively associated in a sample of college men and women (Wendell et al., 2012) as well as in the samples of college women (Kelly, Vimalakanthan, & Miller, 2014; Schoenefeld & Webb, 2013; Timko, Juarascio, Martin, Faherty, & Kalodner, 2014; Webb et al., 2014). Finally, body image flexibility was negatively associated with disordered eating behavior in a community sample of women (Hill et al., 2013). Despite the growing body of evidence using samples of women and mixed samples of men and women, the association between body image flexibility and disordered eating behavior has not been fully investigated in men.

1.3. Body mass index

In addition to disordered eating cognition and body image flexibility, there are other key demographic and psychosocial factors associated with disordered eating behaviors in men (Cafri, Thompson, Ricciardelli, McCabe, Smolak, & Yesalis, 2005; Fairburn et al., 2003; Locker et al., 2012). One such factor is BMI, which has been shown to be positively associated with disordered eating in samples of men (Boisvert & Harrell, 2012; Lavender & Anderson, 2010; Lavender, Anderson, et al., 2012). Although the positive association between BMI and disordered eating behavior is fairly consistent across studies within nonclinical samples of men, it is still unclear why this association exists. One possible explanation drawn from CBT models is that the association is partially explained by cognitive factors and emotion and behavior regulation processes. More specifically, BMI may not have a direct relationship with disordered eating behaviors, but high BMI may be related to maladaptive disordered eating cognitions and poor emotion and behavior regulation, which then contribute to the development of disordered eating behaviors. In accordance with this conceptual model, the present study also investigates the indirect effects of BMI on disordered eating behavior through its effects on disordered eating cognition and body image flexibility.

1.4. Present study

A previous study has demonstrated that both disordered eating cognition and emotion and behavior regulation processes play important roles in disordered eating behaviors in a sample of college men and women (Masuda, Price, et al., 2012). In light of these findings, it is possible that both disordered eating cognition and emotion and behavior regulation processes play important roles in disordered eating behaviors in men. Similarly, it is plausible to speculate that BMI does not have a direct relationship with disordered eating behavior; but rather, higher BMI is related to more disordered eating cognitions and less body image flexibility, which in turn are related to disordered eating behavior in men. The primary purpose of the present study was to test these hypotheses that greater disordered eating cognition and lower body image flexibility are associated with greater disordered eating behavior and that BMI is related to disordered eating behavior through the effect of BMI on body image flexibility and disordered eating cognition.

2. Method

2.1. Participants

The current cross-sectional study was conducted at a large, urban, public four-year university in the Southeastern United States (i.e., Atlanta, Georgia, United States). Participants were recruited from undergraduate psychology courses through a web-based research survey tool. One-thousand and sixty participants (77%, $n_{Female}=816$) completed a survey package that contained multiple self-report measures, and data of 244 male participants were drawn for the present study. Data of some of the female participants ($n=421$) were previously analyzed and published elsewhere (Moore, Masuda, Hill, & Goodnight, 2014).

Of those male participants, seven participants were excluded from the study because their self-reported information of weight and height was not available to compute BMI scores. BMI scores were calculated using the following formula, (weight (lb.)/[height (in.)]$^2 \times 703$). The final sample consisted of 237 participants, ages 17–50 years old ($M=20.97$, $SD=4.86$). The average BMI score for the sample was 23.76 ($SD=5.25$). The present study used standard weight status categories associated with BMI of "underweight" (BMI <18.5), "normal" (BMI between 18.5 and 24.9), "overweight" (BMI between 25 and 29.9) and "obese" (BMI >30.0). Nine percent