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A model of disturbed eating behavior in men: The role of body dissatisfaction, emotion dysregulation and cognitive distortions

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ABSTRACT

Comprehensive models, targeting the development of eating disorders (EDs) in males, often employ a sociocultural perspective and empathize the importance of body dissatisfaction (BD). To further illuminate psychological factors contributing to the development of ED pathology, we propose a mediator model of disturbed eating and compensatory behavior (DECB) for men. This model suggests that emotion dysregulation and the susceptibility to body-related cognitive distortions (thought-shape fusion, TSF) mediate the relationship between BD and DECB. Based on data from a cross-sectional online-survey we tested our model in a non-clinical community sample of young men (N = 123, 18–37 years). We found a significant positive association between BD and DECB, accounting for participant's body mass index (BMI), age and depressive symptoms. While TSF partially mediated the relationship between BD and DECB, we did not detect a corresponding effect for emotion dysregulation. Based on our findings, we concluded that TSF, which describes specific distorted cognitions with respect to one's own body triggered by fattening/ forbidden food, contributes to the pathological eating- and body-related behavior in men who are dissatisfied with their body. We suggest that TSF should be included in etiological models as a relevant aspect of cognitive information processing with emotional and behavioral consequences.

1. Introduction

Lifetime prevalence of eating disorders (EDs) in men of the general population range from 0.2% to 0.4% for anorexia nervosa, 0.1–0.9% for bulimia nervosa and 1.0–1.1% for binge-eating disorder (Allen et al., 2013; Hudson et al., 2007; Preti et al., 2009; Raevuori et al., 2014). In contrast to the relatively low prevalences of full-blown EDs, symptoms of disordered eating on a subclinical level are more frequent in men (Woodside et al., 2001). Recurrent binge-eating or extreme dietary restraints were reported by up 7.7% of the general male population. Further dysfunctional eating and weight/shape control behaviors include excessive exercising and steroid use, which are especially prevalent among men with body image disturbances. Up to 13.5% of men further reveal marked overvaluation of shape and/or weight (for an overview see, Mitchison and Mond, 2015), which is a core common feature of current comprehensive transdiagnostic cognitive behavioral models of ED in men (Cooper and Fairburn, 2011; Dakanalis et al., 2014a).

Body dissatisfaction (BD) is frequently used in this context as a term to describe an individuals' body-related negative self-evaluation. This term does not necessarily refer to clinical symptoms of a disturbed body image or eating behavior, but refers to the degree individuals are concerned about or dissatisfied with their appearance. Representative studies show that BD is widely spread among both genders. Around 60–80% of men report being dissatisfied with their overall body or parts of their body (Fiske et al., 2014; Thompson and Cafri, 2007). Men's concerns regarding their body image seem two-dimensional, referring to either an increase in muscularity and/or weight loss/body fat reduction. Accordingly, BD in men may either result in muscularity increasing behavior or in efforts to lose weight (e.g., Tylka, 2011). Importantly, etiological models consistently found BD to be a causal risk factor for ED symptomatology in women and men (Dakanalis et al., 2014a; Raevuori et al., 2014; Stice, 2002; Stice and Shaw, 2002). In a longitudinal study, Neumark-Sztainer et al. (2006) found that BD among US-male adolescents predicted dysfunctional weight control strategies such as fasting or inappropriate use of food supplements and binge eating. Other studies confirmed these results and showed that BD is associated with other health risk behaviors aiming at increasing muscularity and reducing body fat, such as steroid abuse and supplement intake (Blashill, 2014; Brower et al., 1994; Cafri et al., 2005; Ricciardelli and McCabe, 2003). Most

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recently, Dakanalis et al. (2016) found that BD, negative affect and low self-esteem predicted binge-eating and compensatory behaviors in a longitudinal study with over 2500 male college students.

In sum, the association between BD and ED pathology in men is well established. However, mechanisms relating the common phenomenon of BD to the development of an ED still remain unclear. The most established model, addressing potential mediators, is Stice's (2001) dual pathway model of bulimic pathology, which was proposed and evaluated in cross- and longitudinal studies with females samples (Stice, 2001; Stice et al., 2011). The model suggests that BD contributes to dieting behavior (path 1) and negative affect (path 2), which in turn increases the risk of developing ED pathology in terms of restricting, dieting, binge eating and compensatory behaviors as an attempt to control weight and shape and to regulate negative emotions (Stice, 2001). In recent years, a considerable number of studies were conducted to further clarify the relationship between BD and ED pathology as well as the mediating and moderating psychological mechanisms involved on male samples (e.g., Dakanalis et al., 2015a; 2014b; 2015c). Lavender and Anderson (2010), for example, found in their sample of young male college students, that those who experience pronounced negative mood due to their BD were more likely to engage in maladaptive behaviors, such as binge eating, purging and excessive exercise, especially when they reported to not being able to accept or regulate their negative mood states. In accordance with this results, Dakanalis et al. (2015a) found emotional dysregulation to amplify the relationship between BD and ED symptomatology in a sample of 557 men at the age of 18–28 years.

Based on a cognitive-behavioral approach relating BD to ED pathology, there is a need of further data on the role of cognitive distortion to complete the current models, e.g. the dual pathway model (Culpert et al., 2015). Distorted cognitions are characterized by skewed and non-veridical thoughts related to affective experiences and behaviors that have been linked to psychological problems and mental disorders (Rachman and Shafran, 1999). Under certain conditions, individuals may have difficulties to separate themselves from their negative body-related thoughts which results in a so-called “thought fusion”, a concept that has particular importance in the Acceptance and Commitment Therapy (ACT) (Hayes et al., 1999). Thought fusion results in self-identification with one's own thoughts, and has been associated with cognitive inflexibility, which seems to be an important etiological factor in EDs (Merwin et al., 2011).

Derived from the original concept of “Thought-Action Fusion” (TAF) in obsessive-compulsive disorder (OCD) (Shafran et al., 1996), Shafran et al. (1999) proposed “Thought-Shape Fusion” (TSF) as a specific cognitive distortion mechanism in EDs. TSF describes specific distorted cognitions with respect to one's own body triggered by the imagination of eating fattening/forbidden food. Not only that TSF-like distorted cognitions evoke negative feelings about one's own body (e.g., Coelho et al., 2013), they are also directly related to dysfunctional behaviors, such as the urge to engage in body checking or to restrict food intake (Shafran et al., 1999). So far, associations between TSF and the severity of ED symptoms as well as general psychopathology have been demonstrated predominantly in studies with female samples (Shafran and Robinson, 2004; Shafran et al., 1999). On the other hand, we have found only one study investigating TSF with male participants from an Australian community sample demonstrating a significant association between TSF and ED pathology as well as BD (Dubois et al., 2013).

The TSF concept has been described for three theoretically postulated factors: *Likelihood* (the mere thought of eating fattening/forbidden food leads to the sensation that a subsequent weight gain is more likely), *Moral* (the thought of eating fattening/forbidden food is morally as wrong as the included act) and *Feeling* (the thought of eating fattening/forbidden food evokes feelings of fatness) (Shafran et al., 1999). Although people, who are highly susceptible to TSF, probably know on a cognitive level that merely thinking about eating certain foods cannot influence their body shape or weight, they nevertheless feel on an emotional level that this might be the case (Shafran et al., 1999). However, the theoretically postulated three-dimensional factor structure of the TSF questionnaire has not been found in empirical validation studies yet.

TSF has also been investigated in experimental studies: It has been shown that the imagination of eating fattening/forbidden foods may directly lead to distorted cognitions which influenced self-perception, in terms of feeling fat, concerns about weight gain and the experience of moral wrong-doing. This effect has been demonstrated mostly in female samples (Coelho et al., 2008, 2010; Radomsky et al., 2002).

To conclude, the current research including prospective studies suggests a strong association between BD and ED pathology in men (e.g., Dakanalis et al., 2015a; 2015c; Lavender and Anderson, 2010). The present study reevaluates the role of negative emotionality according to the dual pathway model of Stice (2001) by testing the mediating effect of emotion dysregulation. While in Stice's model, behavioral (i.e. dietary restraint) and emotional (i.e. negative affect) components were considered as mediators of the association between BD and ED, we chose to test a model that includes in addition to an emotional component, a novel cognitive construct, the Thought-Shape Fusion (TSF), that has theoretical and empirical support in relation to disturbed eating (e.g., Fairburn et al., 2003; Shafran and Robinson, 2004). Furthermore, instead of negative affect, we included a related construct of emotion dysregulation, which should not only reflect deficits in the modulation of emotional arousal, but also in the awareness, understanding, and acceptance of emotions, as well as the ability to act in desired ways regardless of emotional state (Gratz and Roemer, 2004).

On the basis of the literature reviewed, we expected BD to predict emotion dysregulation, which in turn would predict disturbed eating and compensatory behavior in men (DECB). Similarly, we expected TSF to mediate the association between BD and DECB in men. Thus, the direct effect between the BD and DECB should become smaller, when including TSF and emotion regulation as mediators into the model (see Fig. 1).

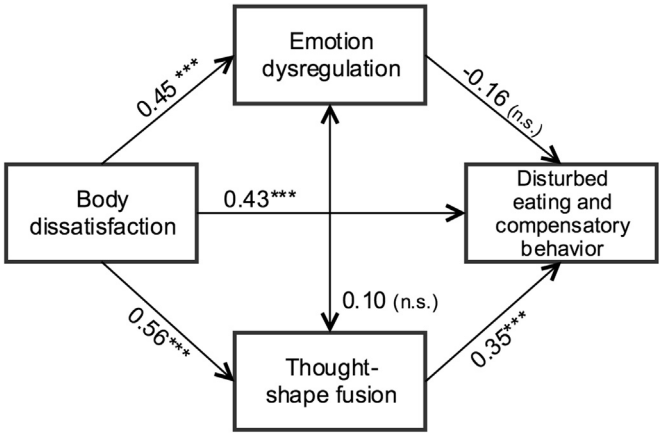

Fig. 1. The mediation model of disturbed eating in men. *Note.* Standardized regression coefficients. Direct effect of body dissatisfaction (BD) to disturbed eating and compensatory behavior (DECB) (*Beta*=0.43, *SE*=*0.09*, *z*=4.67, $p<0.001$). Global indirect effect: BD – (Thought-shape fusion & Emotion dysregulation) – DECB (*Beta*=0.56, *SE*=*0.08*, *z*=7.09, $p<0.001$). The covariance between emotion dysregulation and thought-shape fusion is 0.10 (*SE*=*0.06*, *z*=1.77, $p=0.08$). ***=$p<0.001$.