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Disordered eating in adolescent males and females: Associations with temperament, emotional and behavioral problems and perceived self-competence

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ABSTRACT

The purpose of this study was to describe similarities and differences for adolescent males and females in the association between disordered eating and temperament, emotional and behavioral problems and perceived self-competence. The study sample consisted of 239 youngsters (47% males), aged 14–20 years. Drive for Thinness (DT), Bulimia (B) and Body Dissatisfaction (BD) were associated with eating disorder (ED) related traits, depression and negative perceived self-competence in both sexes. Further, Bulimia was significantly related with aggressive symptoms in both sexes. Additionally, gender differences with respect to the correlations between DT and B and temperament emerged. DT was more strongly associated with a low behavioral activation (BAS) in males (compared to females), whereas B was more strongly related with low effortful control in females (compared to males). These findings confirm and extend previous research concerning gender differences in disordered eating.

1. Introduction

During adolescence, several biological, psychological and social factors are salient in predisposing the individual to different types of emotional and behavioral problems, including hazardous substance use, behavioral problems, dysfunctional eating behavior, and mood disorders (Tarter, 2002). Among adolescents with emotional and behavioral problems, symptom expression is strongly influenced by gender: females are more prone to inwardly directed symptomatology, whereas males are more prone to acting out behaviorally (Leadbeater, Kuperminc, Blatt, & Hertzog, 1999). The present paper focuses on eating disorder (ED) symptoms, which have a strong female preponderance with an overall gender ratio varying from 3:1 to 10:1 (Hautala et al., 2008). Because of this gender imbalance, disordered eating patterns and their correlates have been documented very extensively for females but are understudied for males. The present study aims at filling this gap by investigating gender differences in eating disorder symptoms and their correlates (personality, temperament, emotional and behavioral problems, perceived self-competence). We focus on eating disorder symptoms rather than on eating disorder diagnoses, as previous research has shown that in boys, prevalence rates of DSM-diagnoses of EDs are very low but subclinical disordered eating relatively widespread (Muise, Stein, & Arbess, 2003).

1.1. Associations of ED-related symptoms with ED-related personality traits

Several authors (Garner, Olmsted, & Polivy, 1983; Van Strien, 2002) investigated the associations between ED-related symptoms (e.g., Drive for Thinness, Bulimia, Body Dissatisfaction) and ED-related personality traits (e.g., Perfectionism, Maturity Fears) by means of the Eating Disorder Inventory (EDI) in clinical and normal female samples. They found meaningful correlations between all EDI subscales, but the highest correlations were found between Drive for Thinness, Body Dissatisfaction and Perfectionism, and between Ineffectiveness and Lack of Interoceptive Awareness (i.e., confusion about one's internal state). As far as we know, no study investigated associations between ED-related symptoms and ED-related personality traits in males by means of the EDI.

1.2. Associations of ED-related symptoms with temperament

Temperament plays an important role in the onset, symptomatic expression, and maintenance of EDs (Cassin & von Ranson, 2005) and Gray's reinforcement sensitivity theory has been an important framework to study temperamental vulnerability (Bijttebier, Beck, Claes, & Vandereycken, 2009, for a review). In female ED patients, elevated levels of both behavioral inhibition (BIS; anxiety proneness) and behavioral activation (BAS; impulsivity proneness) sensitivity have been reported (Claes, Robinson, Muehlenkamp, Vandereycken, & Bijttebier, 2010; Kane, Loxton, Staiger, & Dawe, 2004). In community samples of women, both BIS and BAS sensitivity show positive associations with dysfunctional eat-

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ing patterns and attitudes (e.g., Loxton & Dawe, 2007). To our knowledge, only one study thus far investigated BIS/BAS sensitivity in relation to ED relevant behaviors in males. Mussap (2006) found that in non-clinical men weight loss was associated with heightened BIS sensitivity, whereas body development was associated with heightened BAS sensitivity. Finally, a few studies compared male and female ED patients with respect to temperament. For example, Fernández-Aranda et al. (2004) compared 20 male and 20 female ED patients by means of the Temperament and Character Inventory and found that males demonstrated less harm-avoidance (lower BIS) compared to females. Martin et al. (2000) examined the relationship between childhood temperament and the later development of ED symptoms, and found that high negative emotionality (high BIS) and low persistence were the strongest predictors of ED symptoms, particularly in females.

Current theories of vulnerability for psychopathology (e.g., Nigg, 2006) also emphasize the influence of effortful control (EC) processes that enable persons to modulate their emotional reactions and as such decrease the risk associated with temperamental reactivity. Claes et al. (2010), for example, showed that female bingeing/purging ED patients, relative to restrictive ED patients, exhibited lower levels of EC and cognitive control. To the best of our knowledge, no study thus far investigated EC in relation to ED symptoms in males.

1.3. Associations of ED-related symptoms with emotional and behavioral problems

Both anorexia and bulimia nervosa show high rates of co-occurrence with depressive and anxiety symptoms in both males and females (Garcia-Alba, 2004; Kessler, Avenevoli, & Merikangas, 2001; Lewinsohn, Striegel-Moore, & Seeley, 2000; Stice, Presnell, & Bearman, 2001). Lewinsohn, Seeley, Moerk, and Striegel-Moore (2002), for example, reported that the core EDI dimensions, Drive for Thinness, Bulimia and Body Dissatisfaction were associated with lifetime occurrence of major depressive disorder and anxiety disorder for both women and men.

In recent years, interest in the association between adolescent externalizing behavior and bulimic tendencies has increased (Loney, Fowler, & Joiner, 2008). Thompson, Wonderlich, Crosby, and Mitchell (1999) showed that females who endorsed binge eating and purging or dietary restriction had odds of aggressive behavior 2–4 times higher than girls who did not endorse these items, and eating disturbances and aggressive behavior were significantly associated with both drug use and attempted suicide. Also Lewinsohn et al. (2002) found significant associations between the EDI Bulimia subscale and alcohol abuse/dependence for men and women.

1.4. Associations of ED-related symptoms with perceived self-competence

It has been observed that low self-esteem and self-concept disturbances are related to the development of ED (e.g., Jacobi, Paul, de Zwaan, Nutzinger, & Dahme, 2004). Several studies (e.g., Stice et al., 2001; Wertheim, Koerner, & Paxton, 2001) suggest that Body Dissatisfaction is a risk factor for dieting and eating pathology in females. Few studies have examined gender differences in the relationship between ED and other aspects of perceived self-competence. Mendelson, White, and Mendelson (1996) found higher perceived Athletic Competence and lower perceived competence concerning behavioral conduct in males compared to females. Furthermore perceived competence concerning behavioral conduct was positively associated with weight in males but negatively associated with weight in females. In both males and females, global self-worth was associated with (dis)satisfaction about appearance, but not with (dis)satisfaction about weight (Mendelson et al., 1996).

The present study aims at investigating gender differences in (a) self-reported levels of ED-related symptoms, (b) associations of ED-related symptoms with temperament, (c) associations of ED-related symptoms with emotional and behavioral problems, and (d) associations of ED-related symptoms with perceived self-competence. Based on our literature review, we expect (a) higher levels of ED-related symptoms in females than males, (b) a positive association between BIS and a negative association between EC and ED symptoms, particularly in females (compared to males, who show less significant associations between BIS and ED symptoms) (c) a positive association between emotional/behavior problems and ED symptoms (particularly bulimic symptoms) in both sexes, and (d) finally a positive association between low global/physical self-esteem and ED symptoms in both sexes.

2. Methods

2.1. Participants

Three hundred thirty-nine Belgian secondary school students [119 (53.1%) males; 220 (46.9%) females] with a mean age of 16.8 years (SD = 1.33, range 14.3–19.5) participated in the study. Data from 100 adolescents (i.e., 30% of the initially invited group) were excluded due to missing data, yielding a final sample of 239 participants [112 (46.9%) males; 127 (53.1%) females] with a mean age of 16.6 years (SD = 1.33, range 14.2–19.7). The study was approved by the ethical board of the department of psychology.

2.2. Instruments

2.2.1. Dysfunctional eating

The EDI-II (Garner, 1991; Garner et al., 1983) is a 91-item, 6-point forced-choice self-report measure, tapping ED-related symptoms and behavioral and psychological traits common in EDs. In this study, we only used 64 EDI-II items divided over eight subscales: the Drive for Thinness (DT; α = 0.92 in the present study), Bulimia (B; α = 0.70) and Body Dissatisfaction (BD; α = 0.91) subscales tap behaviors and attitudes characterizing EDs, whereas the Ineffectiveness (I; α = 0.90), Perfectionism (P; α = 0.67), Interpersonal distrust (ID; α = 0.72), Interoceptive Awareness (IA; α = 0.81) and Maturity Fears (MF; α = 0.71) subscales tap psychological and personality characteristics associated with EDs.

2.2.2. Temperament

The *BIS/BAS scales* (Carver & White, 1994) consist of 24 items and tap reactivity of Gray's (1987) behavioral inhibition system (BIS, seven items; α = 0.80) and behavioral activation system (BAS; α = 0.71). Cooper, Gomez, and Aucote (2007) proved the applicability of the 4-factor model of the BIS/BAS scales for early to mid adolescents. We preferred to use the 2-factor model of the BIS/BAS scales, due to the low reliability coefficients of the BAS subscales in our sample. EC is measured by the higher-order EC scale (16 items; α = 0.72) of the self-report *Early Adolescent Temperament Questionnaire Revised* (EATQ-R; Ellis & Rothbart, 2001; Rothbart, 1989). Instead of using the EATQ-R higher-order factors Negative/Positive Reactivity to measure Gray's behavioral inhibition/activation reactivity, we decided to use the BIS/BAS scales. In line with the theoretical framework of Gray the BIS scale of the BIS/BAS scales measures anxiety/fear; whereas the Negative Reactivity scale of the EATQ-R measures Frustration. Furthermore, the Positive Reactivity scale of the EATQ-R includes Fear, which