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# **Body Image**

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# Running to win or to be thin? An evaluation of body dissatisfaction and eating disorder symptoms among adult runners



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#### A R T I C L E I N F O

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## ABSTRACT

The current study evaluated associations between sport-performance-related body dissatisfaction (BD), general-appearance-related BD, and their relation to EAT-26 scores among a sample of adult runners who participated in middle- and long-distance races in the northeastern United States (N = 400, 46.5% male). Women reported elevated BD and eating disorder symptoms, as compared to men. Ridge regression was used to analyze correlations between appearance- and performance-related BD with EAT-26 scores. Results demonstrated that appearance- and performance-related BD positively correlated with EAT-26 scores in women ( $\beta$ s = 0.18 and 0.13, respectively). Race length was a significant covariate for women, such that those who ran middle-distance race events were more likely to report higher EAT-26 scores ( $\beta$  = -3.12). These associations were not demonstrated in men. Results suggest that it is beneficial to address sport-specific body image concerns, in addition to more general appearance-related body image concerns in female runners.

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#### Introduction

Etiological models of eating disorders (EDs) such as the transdiagnostic model (Fairburn, 2008) and dual pathway model (Stice, 2001) identify body dissatisfaction (BD) as a key factor in the development of eating pathology. Theoretically, sociocultural influences including the internalization of the thin ideal and external pressures contribute to BD, which subsequently fosters elevated disordered eating through mechanisms such as increased dietary restraint and affect dysregulation (Stice, 2001). Research investigating BD, its components, and development across various populations has suggested that BD is multifaceted, presenting differently within certain subgroups of individuals, including those of different ages (Tiggemann & McCourt, 2013), racial/ethnic groups (Grabe & Hyde, 2006), and genders (Adams, Turner, & Bucks, 2005). Accordingly, examining population-specific variants of BD is an important endeavor for those who study and treat disordered eating.

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http://dx.doi.org/10.1016/j.bodyim.2016.02.003 1740-1445/© 2016 Elsevier Ltd. All rights reserved. Athletes may possess unique risk for EDs and BD; some studies report elevated risk for athletes, as compared to non-athletes (Bratland-Sanda & Sundgot-Borgen, 2013; Hausenblas & Downs, 2001; Sundgot-Borgen & Torstveit, 2004). Sport-related weight pressures related to competition (Reel, Petrie, SooHoo, & Anderson, 2013) and personality characteristics (e.g., perfectionism; Brannan, Petrie, Greenleaf, Reel, & Carter, 2009) may predispose athletes to engage in ED behaviors. Moreover, BD may be nuanced within athletes, who face exposure to sport-specific risk factors (Smolak, Murnen, & Ruble, 2000) in addition to normative risk factors for BD, such as thin-ideal internalization (Bratland-Sanda & Sundgot-Borgen, 2013).

Findings regarding BD and ED links among athletes are inconclusive, with some research indicating higher BD among athletes than non-athletes (Swami, Steadman, & Tovee, 2009), and other research indicating lower BD among athletes than non-athletes (e.g., Smolak et al., 2000). One study of highperformance female athletes reported significant context-specific differences in body image perceptions, such that sport-specific BD explained unique variance in eating pathology, after accounting for BD in daily life contexts (De Bruin, Oudejans, Bakker, & Woertman, 2011). However, most research in athlete populations has focused on ED prevalence and general BD, rather than context-specific nuances (Papathomas & Petrie, 2014).







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Athletes may endorse BD as a result of influences observed in the general population (e.g., internalization of the thin ideal; Thompson & Stice, 2001). However, elevated BD and ED symptoms may also be accounted for by sport-specific factors, such as athletic body ideals or desire to enhance performance via shape/weight manipulation (Sundgot-Borgen & Torstveit, 2004). Runners demonstrate heightened risk for performance-specific pressure to obtain a specific body shape (somatotype), as small stature and low body fat are traditionally considered advantageous for distance running (Legaz & Eston, 2005; Rüst et al., 2011). The ectomorph somatotype, or lean body build, is characteristic of elite runners, and associated with enhanced performance (Malina, Batista, & Siegal, 2002). Runners with high levels of appearance-related BD may use disordered eating behaviors in efforts to mimic the ectomorphic build and attempt to enhance performance. However, attempts to shift somatotype will be futile among individuals who are not predisposed to typify ectomorph physiques.

Importance placed on ectomorph body types as related to enhanced running performance coincides with suggestions that sport-specific ideals are associated with athlete BD. For example, in male marathon runners, lower body mass index (BMI) was associated with better body satisfaction compared to age-matched controls; however, concerns about weight gain did not differ across BMI categories, suggesting that concerns remained regarding the effect of weight/shape on performance (Huddy & Cash, 1997). Comparison of athletes in leanness-focused and nonleanness-focused sports suggests that female athletes in leanness-focused sports reported more weight concerns and BD than nonleanness-focused sport athletes (Petrie, 1996). Thus, athlete BD appears to relate to sport-specific body ideals.

Other factors may also influence BD and ED behaviors among athletes, including race/runner type and gender differences. Research suggests that ED risk may differ according to athlete type or competition level (i.e., recreational, competitive, elite; Byrne & McLean, 2002). Research has also highlighted gender differences in BD and ED symptoms in samples of athletes (Johnson et al., 2004). Differences may be due, in part, to sport-specific body demands that vary by gender. An examination of female athletes noted that EDs were most prevalent in endurance and esthetic sports (i.e., running and gymnastics), whereas EDs in male athletes were most prevalent among weight-class sports (i.e., wrestling and boxing) (Schaal et al., 2011). A recent investigation indicated that risk factors traditionally associated with elevated ED prevalence in females (e.g., perfectionism) did not account for significant variance in ED risk for male athletes (Galli, Petrie, Greenleaf, Reel, & Carter, 2014). Thus, the perception of a "perfect" or ideal body may vary across genders or within a sport (e.g., intra-sport body ideals may vary in BMI, body-fat-percentage, or shape/proportions).

The current investigation had two aims. First, we examined whether performance- and appearance-related BD had unique associations with eating pathology in men and women adult runners. Consistent with etiological models that link elevated BD with EDs (e.g., Stice, 2001), we hypothesized that sport-performanceand appearance-related BD would be positively associated with adult runners' levels of eating pathology. Because athletic BD has been specifically linked with eating pathology in athlete samples (e.g., De Bruin et al., 2011), we expected that BD related to sport performance would evidence a stronger correlation with eating pathology in this sample. For this aim, we examined the associations per gender group, as levels of eating pathology and BD often differ across gender (Galli et al., 2014; Johnson et al., 2004). Second, because race length is not a direct proxy for athletic training status (e.g., an elite runner may opt to run a shorter race), it was unclear whether race length would represent a distinct characteristic among runners; therefore, no a priori hypotheses were generated for this exploratory aim of the study.

#### Method

#### **Participants**

Participants (N=400, 46.5% male) were adult runners completing one of four running events-5 kilometer (k), 10k, half-marathon, and full marathon races-in the northeast United States. Runners ranged from 18 to 71 years old ( $M_{men}$ : 41.6 ± 12.1 years;  $M_{\text{women}}$ : 38.6 ± 10.9 years). Five kilometer (k) and 10k races were identified as middle-distance events; half- and full marathon races were identified as long-distance events. Overall, 156 men and 123 women participated in long-distance races. Sixty men and 61 women completed middle-distance races. Participants were primarily college-educated individuals (89.5%), and self-identified as White (85.5%), Asian (2.0%), Black (1.3%), Hispanic (0.05%) and Other (0.03%). Self-reported height and weight were used to calculate BMI. Mean BMI values were within a healthy range for middle-distance (men:  $24.2 \pm 4.4 \text{ kg/m}^2$ ; women:  $24.2 \pm 5.2 \text{ kg/m}^2$ ) and long-distance runners (men:  $24.4 \pm 2.9 \text{ kg/m}^2$ ; women:  $23.1 \pm 3.0 \text{ kg/m}^2$ ); main effects from a  $2 \times 2$  ANOVA indicated that BMI significantly varied across gender, F(1, 394) = 7.6, p < .01,  $\eta_p^2 =$ 0.02; BMI did not vary across race length (p > .05). The majority of participants reported low ED symptom levels; fourteen individuals (10 women) reported EAT-26 scores exceeding the clinical cut-point (20).

### Measures

**Eating Attitudes Test-26 (EAT-26; Garner, Olmsted, Bohr, & Garfinkel, 1982).** The EAT-26 is a 26-item scale used to gauge ED attitudes and behaviors. Participants rate items, such as "I am terrified of being overweight," using a 6-point scale (3 – *Always,* 2 – *Usually,* 1 – *Often,* 0 – *Sometimes,* 0 – *Rarely,* 0 – *Never*). The measure has shown good validity and reliability in previous investigation in samples of athletes (Pope, Gao, Bolter, & Pritchard, 2015), with a Cronbach's  $\alpha$  of .81 in our sample.

Eating Disorder Inventory-2: Body Dissatisfaction Subscale (EDI-2-BD; Garner, 1991). The EDI-2-BD subscale measures body-part dissatisfaction; the scale has several items assessing satisfaction with specific body parts (e.g., hips, buttocks) and a single item assessing more general BD. To assess differences between BD specific to sport-performance and dissatisfaction related to appearance, the EDI-2-BD was presented twice, with differential qualifiers specifying BD ratings. For one presentation, participants rated how often they agree with statements such as "In relation to my sport performance ... I think that my thighs are too large"; for the other presentation, participants rated statements such as "In relation to my overall appearance ... I think that my thighs are too large". EDI-BD scores were calculated using the 1 (Never) through 6 (Always) scoring method, which is suggested for non-clinical samples (Schoemaker, van Strein, & van der Staak, 1994). Cronbach's αs were .90 and .88 for sport-performance BD and overall appearance BD, respectively.

**Demographics.** Participants provided demographic data, including self-reported height and current body weight from which BMI (kg/m<sup>2</sup>) was computed. Research comparing self-report and objectively measured BMI in adult athlete samples supports the validity of self-reported BMI (Gay, Monsma, & Torres-McGehee, 2009).

#### Procedures

Runners were approached at race events and asked if they would be interested in participating in the study. Voluntary Download English Version:

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