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Brief research report

# Psychosocial predictors of drive for muscularity in male collegiate athletes

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ABSTRACT

The purpose of this study was to examine the simultaneous relation of general and sport-specific pressures about body weight and shape, negative affect, and body satisfaction to drive for muscularity (DM) in male collegiate athletes. Participants were 183 male athletes who were drawn from three NCAA Division I institutions and represented 17 different sports. As hypothesized, after controlling for BMI and sport type, sport-specific pressures, negative affect, and body satisfaction were significant predictors, and accounted for 15–34% of the variance in muscularity-oriented body image and muscularity behaviors; general pressures however were not significantly related. These findings offer insight into the personal and social antecedents of DM in male athletes, and serve as a starting point for future research on DM in this population.



## Introduction

A drive for muscularity (DM), which refers to attitudes and behaviors focused on increasing muscularity, is salient for male athletes who need to be big, strong, and powerful. According to McCreary and Sasse (2000), DM is comprised of two dimensions – *muscularity behaviors* (i.e., actions taken to increase muscle mass) and *muscularity-oriented body image* (i.e., attitudes about being muscular). Such attitudes and behaviors have been positively linked to the use of appearance and performance enhancing drugs (Zelli, Lucidi, & Mallia, 2010), traditional masculine norms (Steinfeldt, Gilchrist, Halterman, Gomory, & Steinfeldt, 2011) and exercise dependence (Hale, Roth, DeLong, & Briggs, 2010) in male athletes, and disordered eating in non-athletes (Grossbard, Atkins, Geisner, & Larimer, 2013).

Men's DM may result from perceptions of not enough muscularity and/or too much body fat (Tylka, 2011). According to the quadripartite model of body change behaviors in men (Tylka, 2011), these dual-pathways to DM and disordered eating are a result of pressures from friends, family, media, and romantic partners to achieve a muscular physique. Petrie and Greenleaf (2012) acknowledge these general societal pressures, as well as sport-specific concerns as influential in DM and disordered eating among male athletes. Research on the cross-sectional predictors of DM as an outcome for male athletes, however, has been limited. A better understanding of the correlates of DM will aid practitioners in identifying male athletes who may be at risk for engaging in unsafe muscle building practices, such as substance abuse and overtraining.

Male athletes experience pressures related to both societal body ideals and sport performance (Galli & Reel, 2009). In one cross-sectional study with male collegiate athletes, sport pressures, such as teammates, coaches, and uniforms, predicted the athletes' engagement in muscle-building behaviors (e.g., weight lifting, supplement use), whereas both sport and societal pressures predicted athletes' desire to be more muscular (Galli, Petrie, Reel, Chatterton, & Baghurst, 2014). Despite preliminary evidence suggesting that sport-specific pressures are cross-sectional predictors of DM, their importance relative to other psychosocial correlates (e.g., negative affect, body satisfaction) has yet to be determined in male athletes.

Perceptions of a lack of muscularity may be related to negative affect in the form of sadness, shame, or depression (Heywood & McCabe, 2006). Such feelings can be mitigated through the pursuit and achievement of a muscular appearance that is more closely aligned with contemporary views of masculinity (Ricciardelli &

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McCabe, 2004). For example, the idealization of a muscular body image was related to higher levels of depressive symptomatology for male undergraduate students (Bergeron & Tylka, 2007). Given the association between negative affect and DM in adolescent male non-athletes (e.g., McCabe & Ricciardelli, 2005), and because no studies have examined this relationship in male athletes, research on this variable is warranted.

Dissatisfaction with body weight, shape, and size can lead men to desire a more muscular physique. For example, Cafri, Strauss, and Thompson (2002) found that the ideal body reported by college men had approximately 15 extra pounds of muscle and 2% less body fat than their actual bodies. Furthermore, 80% of male athletes interviewed reported being dissatisfied with the appearance, weight, or function of their body, particularly their strength and muscularity (Galli & Reel, 2009). Because men's body satisfaction revolves around muscularity (Tylka, 2011), and because male athletes may be dissatisfied with their muscular strength and power, a connection between body dissatisfaction and DM would be expected.

Despite these empirical and theoretical links to DM in men (Petrie & Greenleaf, 2012), no study has yet considered the simultaneous relation of general and sport-specific pressures, negative affect, and body satisfaction to DM in male collegiate athletes. Because risk factors identified with non-athlete samples do not automatically generalize to collegiate athletes, who operate in unique sociocultural contexts (Petrie & Greenleaf, 2012), such an extension is necessary. DM is particularly salient for male athletes at the collegiate level because they feel compelled to build a more muscular body to improve performance and their standing on the team (Galli & Reel, 2009). At the same time, they are also college students, and subject to the pressure of achieving the idealized lean and muscular physique (Ridgeway & Tylka, 2005). We hypothesized that after controlling for the athletes' body mass index, sport-specific and general pressures related to body weight and being attractive, negative affect, and dissatisfaction with body size and shape would cross-sectionally predict higher DM.

## Method

### Participants

Male athletes ($n = 183$; $M_{age} = 20.34$ years, $SD = 1.68$; $M_{BMI} = 24.81$ kg/m$^2$, $SD = 5.25$) from three NCAA Division I institutions in the Mountain West, Southwest, and Midwest regions of the United States participated. The majority were White (78.7%, $n = 144$), followed by African-American (13.7%, $n = 25$), Hispanic/Latino (3.8%, $n = 7$), Asian-American/Pacific Islander (1.1%, $n = 2$), and "other" (2.7%, $n = 5$). Athletes participated in 17 different sports, including football (14.8%, $n = 27$), ice hockey (12.0%, $n = 22$), golf (10.9%, $n = 20$), basketball (10.9%, $n = 20$), track & field (10.4%, $n = 19$), cheerleading (8.7%, $n = 16$), gymnastics (6.6%, $n = 12$), swimming (6%, $n = 11$), volleyball (6%, $n = 11$), diving (4.4%, $n = 8$), cross-country (3.3%, $n = 6$), downhill skiing (1.6%, $n = 3$), fencing (1.1%, $n = 2$), tennis (1.1%, $n = 2$), lacrosse (1.1%, $n = 2$), wrestling (.5%, $n = 1$), and cross-country skiing (.5%, $n = 1$).

### Measures

**Demographics.** Participants' self-reported age, race/ethnicity, current height and weight, and sport type. Body mass index (BMI) was derived from these values and used as a continuous variable.

**Drive for muscularity.** The 15-item Drive for Muscularity Scale (DMS; McCreary & Sasse, 2000) measures muscularity oriented body image (7 items; "I wish that I were more muscular") and muscularity behaviors (7 items; "I lift weights to build up muscle"). One item – "I think about taking anabolic steroids," was not included because it has failed to load onto either factor (e.g., McCreary, Sasse, Saucier, & Dorsch, 2004). Athletes rated each item from 1, *never*, to 6, *always*. Mean total score was determined for each factor; higher scores represent greater drive for muscularity on that dimension. Alpha coefficients for the current sample were .84 (muscularity behaviors) and .92 (muscularity body image). McCreary and Sasse (2000) have provided extensive support for the scale's convergent and discriminant validity.

**Pressures about weight and appearance.** An 8-itemWeight Pressures Scale for Athletes (Petrie, Greenleaf, Reel, & Carter, 2009) was used to measure athletes' experience of general pressures (i.e., from family, friends, romantic partners, TV shows/movies, and magazines) and sport-specific pressures (i.e., from coaches, teammates, and sport judges). Athletes rated their experience of pressure from each source (i.e., "Indicate how much pressure you feel from each of the following groups/entities to achieve/maintain a certain body size/shape and/or weight") on a 7-point Likert scale, ranging from 1, *none at all*, to 7, *extreme*. Total score for each type of pressure was the mean of those items; higher scores represented greater perceived pressure. Alphas coefficients for the current sample were .79 (sport pressures) and .82 (general pressures).

**Negative affect.** Based on Stice and Shaw (1994) visual analog mood scale, five items were used to determine the athletes' overall negative affect. For feelings of sadness, shame, guilt, anxiety, and stress, the athletes rated how much they were experiencing each affective state, ranging from 1, *very slightly or not at all*, to 5, *extremely*. Total score was the mean of the items; higher scores represented greater negative affect. Alpha coefficient for the current sample was .85. Stice and Shaw provided support for these items' convergent validity, noting significant correlations with the Beck Depression Inventory and bulimic symptomatology.

**Body satisfaction.** The 7-item Body factor from the Body Parts Satisfaction Scale-Revised (BPSS-R; Petrie, Tripp, & Harvey, 2002) was used to measure athletes' satisfaction with their bodies based on ratings of different body parts (e.g., legs, arms, stomach). For each body part, athletes rated their satisfaction from 1, *extremely dissatisfied*, to 6, *extremely satisfied*. Total score is the mean; higher scores indicate more satisfaction. Petrie et al. (2009) reported a Cronbach's alphas of .90; alpha for our study was .92. Petrie et al. (2002) provided extensive information on the scale's factorial and construct validity and factor structure.

The 7-item Appearance Evaluation subscale from the Multidimensional Body-Self Relations Questionnaire (MBSRQ-AE; Cash, 2000) assessed overall appearance satisfaction. Athletes rated each item (e.g., "I like my looks just the way they are") from 1, *definitely disagree* to 5, *definitely agree*. Total score is the mean; higher scores indicate more satisfaction. Cash (2000) reported a Cronbach's alpha of .85; alpha from the current study was .87. Cash (2000) has provided extensive information about the scale's convergent, discriminant, and construct validity.

### Procedures

First, we obtained approval from each of the three school's IRBs and the athletic directors and head coaches from each school's athletic departments. The researcher at each institution scheduled data collection times directly with the head coaches who agreed to have their athletes participate. Each data collection was anonymous and voluntary, and took place throughout the year with only the researcher present to administer the survey packet. At the beginning of each data collection, the athletes were told that the purpose of the larger study was to examine the physical and psychological health and well-being of male collegiate athletes. After providing their consent, athletes completed the measures via paper and pencil, which took 30–45 min. Although this study was funded by a