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Abstract

Purpose: The purpose of the present study was to explore the relative contributions of self-blame and internalized shame to variability in disordered eating and drive for muscularity scores in collegiate men.

Method: One hundred sixty-eight male college students in the Rocky Mountain region of the United States completed valid and reliable self-report survey measures: the Drive for Muscularity Scale, the Internalized Shame Scale, the Shame and Guilt Eating Scale to assess self-blame and the Eating Attitudes Test. Cross-sectional data were analyzed through descriptive, correlation, and regression statistics.

Results: Men who reported higher levels of self-blame, r=.39, p<.001, and internalized shame, r=.38, p<.001, also reported higher levels of eating disorder symptomology. Similarly, men who scored higher on internalized shame, r=.20, p<.01, reported higher scores on drive for muscularity. Regression analyses revealed that internalized shame was the sole contributor to variability in drive for muscularity scores, β=.20, p < .01, whereas both self-blame, β=.27, p < .001, and internalized shame, β=.24, p < .001, contributed to scores on disordered eating attitudes and behaviors in men.

Conclusions: Our study was the first to examine how internalized shame and self-blame relate to drive for muscularity and disordered eating in collegiate men. Our results suggest that both self-blame and internalized shame may contribute to disordered eating in men. Additionally, internalized shame appears to relate to drive for muscularity in men. Clinicians may wish to consider how they approach treatment given the potential contributions of internalized shame and self-blame to disordered eating in their male clients.

Keywords: collegiate men, drive for muscularity, eating attitudes test, internalized shame, self-blame

Level of Evidence: Level V, cross sectional descriptive study

Recent research suggests that disordered eating attitudes and behaviors (e.g., restrictive dieting, fasting, meal skipping, food group exclusion, subclinical binge eating, subclinical use of compensatory behaviors [1]) are more common in men than once believed [2, 3]. Recent longitudinal studies report that unhealthy weight control behaviors increase as young men move from adolescence into young adulthood [4], as does body dissatisfaction [5]. In fact, approximately 25% of collegiate men engage in subclinical binge eating and dieting, and nearly one-third engage in compensatory behaviors, such as excessive exercise [6]. In addition, approximately 70%-80% of collegiate men express body dissatisfaction [7, 8]. Many factors influence vulnerability to disordered eating and body image dissatisfaction [9-14]. However, researchers suggest [14-16] that those who suffer with body dissatisfaction, disordered eating attitudes and behaviors may take personal responsibility for their condition and thus blame themselves (e.g., believe that they are

responsible for their body dissatisfaction and disordered eating symptomology) [14] and feel ashamed about their body dissatisfaction and disordered eating. From an emotional perspective, blame occurs when one holds someone, in this case themselves, responsible for something they have deemed to be morally wrong [17]. Self-blame is thought to be part of a larger ineffective method of coping called intropunitive avoidance, where individuals avoid dealing with their problems by blaming themselves for having the problem in the first place. Research with adolescent boys found that those who experienced body dissatisfaction and/or were at risk for an eating disorder were more likely to engage in self-blame as a "coping strategy" than in any other ways of coping with their problems [18]. Similarly, Farrell, Lee, and Deacon [14] reported that adult men and women living in the United States who demonstrate disordered eating attitudes and behaviors generally hold higher levels of self-blaming attitudes. In addition, adult men who have been diagnosed with an eating disorder display higher scores on measures of self-blame than do men who have been frequent users of anabolic steroids [15]. However, little is known about the relationship between self-blame and disordered eating in collegiate men. Self-blame has also been found to positively correlate with body dissatisfaction in collegiate women [16]. However, little is known about the relationship between body dissatisfaction and self-blame in collegiate men, and more research on the link between self-blame and disordered eating attitudes and behaviors needs to be conducted in this population. Thus, one purpose of the present study was to examine the relationships between self-blame, body dissatisfaction, and disordered eating attitudes and behaviors in collegiate men.

Related to self-blame, internalized shame, or shame which reflects feelings of inferiority, worthlessness, inadequacy, and alienation, has been linked to body image dissatisfaction in female college students [19]. Internalized shame occurs when one feels flawed, and often humiliated or embarrassed about his or her circumstances [17]. Internalized shame can occur when there is a perceived discrepancy between where one believes he is and where he thinks he should be based on personal or cultural standards. For example, in one study of collegiate women, when women perceived that their body did not meet the cultural standards of thinness, which they had then internalized as their own personal ideal of what they felt they should look like, they experienced feelings of failure and shame [19]. Similarly, body shame is positively correlated with scores on body dissatisfaction as measured by the Drive for Muscularity Scale in adult men [20]. Yet, less is known about the relationship between drive for muscularity and internalized shame. The drive for muscularity has become increasingly prevalent in men in late adolescence and early adulthood and is associated with numerous health consequences, including depression, binge drinking, dieting, and the use of muscle-building products and supplements [21]. Internalization of the muscular ideal is also associated with muscle dysmorphia and disordered eating in men [13], as well as symptoms of orthorexia nervosa [22]. Men's negative attitudes about their bodies, including negative feelings about their muscularity, have been linked to both external and internal feelings of body shame [23]. In fact, drive for muscularity is associated with body shame in men across many studies [2, 24], and it has been linked to self-stigmatization, a form of internalized shame [25]. Shame and self-stigma around weight and body have been found to be the strongest correlates of eating disordered symptomology, as measured by the EAT-26, in college-age women [26]. Similarly, Dakanalis et al. [27] found that internalized body shame correlated with disordered eating attitudes and behaviors in collegiate men. This is not surprising as within the core of internalized shame is self-esteem [28], and self-esteem, in previous studies, has been found to be salient in predicting eating disorders in adolescents and young adult men and women [29, 30]. However, no research has examined drive for muscularity, disordered eating, self-blame and internalized shame together to determine how they may be interconnected in collegiate men.

It is important to examine both self-blame and internalized shame as correlates of body dissatisfaction and disordered eating as recent research in adolescent females suggests that both shame and self-blame may decrease motivation for seeking help with recovering from body dissatisfaction and disordered eating [31]. In addition, a recent study of women suffering from eating disorders suggests that while shame may serve as both a contributing factor to the development of an eating disorder as well as a consequence of the eating disorder, the guilt and self-blame surrounding the eating disorder seems to be solely a consequence of the eating disorder [32]. Similarly, studies of body dissatisfaction and disordered eating symptomology in female college students have suggested that shame is a more powerful predictor of both disordered eating and body dissatisfaction than are feelings of guilt and self-blame [33]. However, little is known about how these two variables relate to body dissatisfaction and disordered eating in males, specifically collegiate males. Recent research in family therapy echoes the notion that while blame and shame are often intertwined, they are separate emotions and must be dealt with as such. For example, Amoss et al. [17] argue that blame tends to be a moral issue, whereas shame occurs when one makes negative judgements about oneself. Contradictory to Oluyori's [32] findings, Amoss et al. [17] suggest that blame may lead to shame, rather than the other way around. That is, when one feels a sense of blame, they may be more likely to internalize that feeling, leading to guilt and shame. However, Amoss et al. also argue that from a therapeutic perspective that shame can be harnessed to

serve as motivation to make positive changes in health and overcoming the sense of blame. Thus, these studies [17, 31-33] underscore the importance of ascertaining what unique contributions self-blame and internalized shame might have as correlates of body dissatisfaction and disordered eating in collegiate men, as no studies have examined these relationships before.

Recent research has indicated an increase in body dissatisfaction [5] and unhealthy weight control behaviors [4] as men enter young adulthood. Yet, collegiate men are still more likely to exhibit body dissatisfaction than they are signs of disordered eating [6-8]. Researchers also suggest that different variables may predict body dissatisfaction and disordered eating [9-14]. Thus, it is important to examine factors that may independently correlate with body dissatisfaction and disordered eating attitudes and behaviors in collegiate men.

Previous research has established that self-blame [14, 15] and internalized shame [27] relate to disordered eating attitudes and behaviors in men. Thus, based upon previous findings, we first hypothesized that men who report higher levels of self-blame [14, 15] and internalized shame [27] would also report higher levels of eating disorder symptomology. Second, based on previous research, we also hypothesized there would be positive correlation between internalized shame and drive for muscularity [2, 20, 24]. Although previous research has established a relationship between self-blame and body dissatisfaction in collegiate women [16], little is known about the relationship between self-blame and body dissatisfaction in collegiate men. Thus, the second purpose of the present study was to explore the relationship between self-blame and drive for muscularity in men.

Although research has examined the interplay of internalized shame and self-blame in their relationships to disordered eating and body dissatisfaction in collegiate women [33], to our knowledge, no studies have examined the relationships between disordered eating, self-blame, and internalized shame at the same time in collegiate men. Thus, it is difficult to know whether self-blame or internalized shame accounts for more of the variance in disordered eating in collegiate men. Based on previous research in women [32-33], it is possible that internalized shame may account for more of the variance in body dissatisfaction and disordered eating symptomology in collegiate men. However, given research has not examined self-blame and internalized shame in collegiate men, it is difficult to predict which variable might explain more of the variance in disordered eating and body dissatisfaction (drive for muscularity) in collegiate men. Thus, the final aim of the present study was to explore the relative contributions of self-blame and internalized shame to variability in disordered eating and drive for muscularity scores in collegiate men.

In sum, based on previous research, we hypothesized that:

1) men who report higher levels of self-blame [14, 15] and internalized shame [27] would also report higher levels of eating disorder symptomology.
2) there would be positive correlation between internalized shame and drive for muscularity [2, 20, 24]. In addition, as little is known about the relationship between self-blame and body dissatisfaction in collegiate men, we wanted to explore the relationship between self-blame and drive for muscularity in men. However, no specific hypotheses were made about this relationship.

In addition, no studies have examined the relationships between disordered eating, self-blame, and internalized shame at the same time in collegiate men. Thus, the final aim of the present study was:

3) to explore the relative contributions of self-blame and internalized shame to variability in disordered eating and drive for muscularity scores in collegiate men. As no studies have examined these relationships together, no specific hypotheses were made.

Method

Participants

The population for this study was based on a convenience sample of 168 male students enrolled in an Introduction to Psychology course at a state university in the Rocky Mountain region of the United States. Participants had to be 18 years or older to participate; ages ranged from 18-42, the average age of the student participants was 20.57 years (*SD* = 4.36). The majority (81.5%) of students identified as White/Caucasian, with 6.5% of students identifying as Hispanic/Latino, 2.4% Black/African-American, 2.4% Oriental/Asian American, 0.6% Native American, 4.2% Mixed

heritage, and 2.4% "Other." The students in the course were awarded credit in their course for completion of the online survey. The Institutional Review Board approved the study before data collection commenced. As this was a voluntary on-line survey, participants were informed that completion of the survey implied consent.

Measures

Participants completed the Drive for Muscularity Scale (DMS) [34], the Internalized Shame Scale [28], the Shame and Guilt Eating Scale [35] to assess self-blame, and the Eating Attitudes Test (EAT-26) [36] to assess disordered eating attitudes and behaviors.

Drive for Muscularity Scale. Drive for muscularity was measured using the Drive for Muscularity Scale [34]. The Drive for Muscularity Scale (DMS) is a 15-item, self-report survey of the extent to which people desire to have a more muscular body. Each item is scored using a 6-point scale, ranging from always to never (*always =1; never = 6*) and items are summed to create a scale score (Cronbach's α=.90 for the current study). Sample items include "I wish that I were more muscular" and "I think that I would feel stronger if I gained a little more muscle mass."

Internalized Shame Scale. Internalized shame was measured using the 30-item Internalized Shame Scale (ISS) [28]. Items (e.g., I feel like I am never quite good enough) were scored on a 4-point Likert scale from never to almost always (*never = 0; almost always = 4*) and items were summed to create a scale score (Cronbach's α=.92 for the present study).

Shame and Guilt Eating Scale. Self-blame was assessed with Frank's [35] 4-item shame and guilt eating scale (e.g., "When I eat quantities that most people consider to be normal, I feel that I am doing something wrong."). Items were measured on a Likert scale from 5 ("*Almost Always*") to 1 ("*Never*"). Items were then summed to create a scale score (Cronbach's α=.84 for the current study).

Eating Attitudes Test. The EAT-26 [36] is a commonly used self-report measure that determines whether an individual may be at risk for developing an eating disorder based on their responses to 26 attitudinal items (e.g., "I am terrified of being overweight.") measured on a 6-point Likert scale, where *Always* = 3, *Usually* = 2, *Often* = 1, and *Sometimes*, *Rarely* and *Never* are coded as 0. After recoding positively worded items, all items are summed to create a scale score (Cronbach's α=.83 for the present study).

Design and Procedure

This study was cross-sectional in design. At our institution, students enrolled in Introduction to Psychology are given the opportunity to participate in research studies for course credit. Students were allowed to choose from a variety of studies based on a researcher-provided description of each study using the SONA subject recruitment platform. The description for our study indicated that the purpose of the study was to gather information from collegiate men about their feelings about gender roles, eating and exercise behaviors. Students who self-selected to participate in our study were then given a link to take our survey individually using an online survey format called Qualtrics. They were then asked to read through an informed consent form and click a button to give their consent to participate. Students were assured of the anonymity of their participation. If they consented, participants were then given 60 min to complete the survey.

Statistical Analyses

Variables were checked for normality using the Kolmogorov–Smirnov test. If not normal, variables were transformed via log transformation, where appropriate. Pearson's correlations were used to assess the relationships between variables. Stepwise regression analyses were used to determine relative contributions of internalized shame and self-blame on the variance in scores on disordered eating and drive for muscularity. To reduce the risk of Type I error rate, the significance level was set at $p < 0.01$ for all analyses, based on Bonferroni's correction. Data analysis was conducted using IBM®SPSS®, version 25.0 (Armonk, NY: IBM Corp; 2015).

Results

As displayed in Table 1, all bivariate correlations among variables were significant. 7.8% of the men in our study were considered "at risk" for an eating disorder, meeting the cutoff score of 20 or higher on the EAT-26 [36]. As hypothesized, men who reported higher levels of self-blame, r=.39, p<.001, and internalized shame, r=.38, p<.001, also reported higher levels of eating disorder symptomology. Similarly, men who scored higher on internalized shame also reported higher scores on drive for muscularity, r=.20, p<.01. We also explored the relationship between self-blame and body dissatisfaction in men. Although there was a positive correlation between self-blame and drive for muscularity, that trend did not quite reach significance, r=.16, p=.04.

We then performed stepwise linear regressions to assess the relative contribution of the variables that were significant in Table 1 as correlates of drive for muscularity and disordered eating. The resulting models are presented in Table 2. Internalized shame explained 4% of the variance in DFM scores. Self-blame accounted for 15% of the variance in disordered eating. Internalized shame accounted for an additional 5% of the variance in disordered eating.

Discussion

Given the increasing prevalence of the drive for muscularity [21] and its associations with muscle dysmorphia, disordered eating [13], and orthorexia nervosa [22], the present study sought to contribute to the knowledge of factors that may predict drive for muscularity and disordered eating. Very little is known about how self-blame and internalized shame relate to drive for muscularity and disordered eating in collegiate men. Thus, the purpose of the present study was to examine relationships between drive for muscularity, disordered eating attitudes and behaviors, self-blame and internalized shame in collegiate men in the United States. Based on the previous research, we first hypothesized that men who reported higher levels of self-blame [14, 15] and internalized shame [27] would also report higher levels of disordered eating attitudes and behaviors.

The results of our study replicated previous findings relating to our first hypothesis. Similar to findings in the Project EAT study of men in their 20s, slightly under half of the men in our study exhibited signs of disordered/unhealthy eating attitudes and behaviors [37]. Similar to previous studies of collegiate men, nearly 8% of the men in our study met the "cutoff" score for being considered at risk for an eating disorder, and the average scores on the EAT-26 were similar to previous studies [38]. The collegiate men in our study exhibited "normal" levels of self-blame [35]. Interestingly, collegiate men in our study demonstrated slightly higher levels of internalized shame than had been previously reported in 2002 [39]. It is unclear whether shame has increased in college students in recent years or whether there was something unique about our sample.

Second, based on previous research, we hypothesized there would be positive correlation between internalized shame and drive for muscularity [2, 20, 24]. Men in our study exhibited similar levels of drive for muscularity as has been found in previous literature [8, 40]. Furthermore, our results were similar to previous findings on the association between drive for muscularity and internalized body shame [2, 20]. The association between internalized shame and drive for muscularity was also relatable to the association of self-stigmatization and drive for muscularity found in previous research [25]. Given that research in collegiate women has found a positive correlation between self-blame and body dissatisfaction [16], we thought we might find similar results in men. However, although there was a small, positive correlation between drive for muscularity and self-blame in our sample, it did not reach statistical significance. The inconsistencies between our findings and Ward and Hay's [16] findings could have been due to the gender of the participants or to the measures used. For example, studies of self-blame and depression in adolescents have suggested that females are more likely to suffer with self-blame as a component of their depression than are males [41]. Although no studies have examined gender differences in self-blame in regard to disordered eating and body image, it is possible that gender differences may emerge in the relative predictive capacities of self-blame.

Following our second hypothesis, the final aim of the present study was to explore the relative contributions of self-blame and internalized shame to variability in disordered eating and drive for muscularity scores in collegiate men. Although research has examined the interplay of internalized shame and self-blame in their relationships to disordered eating and body dissatisfaction in collegiate women [33], to our knowledge, no studies have examined the relationships between disordered eating, self-blame, and internalized shame at the same time in collegiate men. In Dakanalis et al.'s study of adult men [27] and in support of the findings from the Project EAT studies in adolescents [29, 30], internalized shame significantly predicted disordered eating in collegiate men. In our study, self-blame accounted for a greater percentage of the variance in disordered eating attitudes and behaviors than did internalized shame. On the surface,

our findings seem to contradict previous research in women [32-33] that suggested internalized shame is more predictive of disordered eating symptomology. However, as Amoss and colleagues [17] pointed out, the relationships between self-blame and shame are complicated and while they are separate emotions, they are intertwined, and blame may lead to shame. Although no studies have examined the relative contribution of both self-blame and internalized shame on disordered eating attitudes and behaviors in men, in a recent study, Lamont [42] found that collegiate females with high levels of body shame tend to blame themselves for negative health outcomes, such as disordered eating. This level of self-blame is so powerful because these women feel "immutable flaws in the core self" (p. 43) when they experience a negative health outcome like disordered eating. As our study was the first to examine both self-blame and internalized shame as predictors of disordered eating in men, it is unknown why self-blame was a more powerful predictor of disordered eating than was internalized shame. It is unclear whether men experience the same feelings of being flawed at their core as women do when faced with a negative health outcome like disordered eating [42]. Comparing these relationships in men versus women to see if self-blame and internalized shame relate to disordered eating in the same way may yield valuable findings.

Limitations

Although our study was the first of its kind to examine the relationships between drive for muscularity, disordered eating attitudes and behaviors, self-blame and internalized shame in collegiate men, there are a few limitations that should be noted. First, our findings are based on self-reported data from an Introduction to Psychology course at one university in the Rocky Mountain region of the United States. It is possible the participants in our study and those enrolled in this course may not be representative of all collegiate men who may be engaged in different courses and majors, and a more diverse sample in this regard may be better suited to represent the full population of collegiate men. Furthermore, we did not screen for the presence of psychiatric or psychological conditions, outside of the EAT-26 scores. We also did not screen for athletic status or other population subsets known to be at an increased risk for disordered eating. Second, internalized shame explained a very small percentage of the variance in drive for muscularity. There are clearly other factors that contribute to drive for muscularity in men [see 2, 13, 23, for example]. It should also be noted that collegiate men in our study demonstrated slightly higher levels of internalized shame than have been previously reported [39]. It is unclear whether shame has increased in college students in recent years or whether there was something unique about our sample. Similarly, we were only able to account for about a one-fifth of the variance in disordered eating attitudes and behaviors in men. Finally, our study was cross-sectional in design, and thus could not comment on causality between variables.

Conclusion

Our results suggest that both self-blame and internalized shame may show a connection to disordered eating attitudes and behaviors for the men in our study. In addition, internalized shame appears to relate to drive for muscularity for these men, although the predictive value was relatively low. Clinicians who treat men who suffer from body dissatisfaction or disordered eating attitudes and behaviors may wish to consider how they approach treatment given the potential contributions of internalized shame and self-blame to disordered eating in their male clients. Finally, given the paucity of research on internalized shame and self-blame in men, future research should continue to explore how these variables relate to body dissatisfaction and disordered eating in both men and women.

Due to the limitations in our study, future studies might wish to utilize other measures to assess disordered eating attitudes and behaviors, screen for other psychological conditions, compare findings in men versus women, use a sample with a more diverse age range, and collect data from participants enrolled in a variety of courses to better represent the college population. Second, future research should look further into whether shame has increased in college students in recent years or whether there was something unique about our sample. Regardless, future studies may wish to explore how internalized shame fits in with other variables to explain the variance in drive for muscularity scores. It may also be valuable for future researchers to examine how internalized shame and self-blame relate to other factors in accounting for the variance in disordered eating attitudes and behaviors in men. Future research may also wish to examine relationships between body dissatisfaction and self-blame in men and women in more depth. Finally, it may be valuable for future researchers to track individuals over a period of time to determine whether it is the eating disorder symptoms and body dissatisfaction that cause internalized shame and self-blame or vice versa.

Compliance with Ethical Standards

Funding: There was no funding for this study.

Ethical Approval: All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent: Informed consent was obtained from all individual participants included in the study.

Conflict of Interest Statement

The authors declare that that they have no conflicts of interest.

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Table 1

Means, Standard Deviations, and Correlations between Drive for Muscularity, Disordered Eating, Internalized Shame, and Self-Blame

	DFM	DE[a]	IS[a]	SB[a]
M (SD)	47.64 (15.16)	7.77 (7.74)	46.65 (18.71)	6.62 (3.56)
DFM	1			
DE [a]	.41***	1		
IS [a]	.20**	.38***	1	
SB [a]	.16†	.39***	.49***	1

Note: Means and Standard Deviations are given for untransformed variables; DFM=Drive for Muscularity (scores range from 15-90); DE=Disordered Eating (untransformed scores on the EAT-26 range from 0-75); IS=Internalized Shame (untransformed scores on the Internalized Shame Scale range from 0-120); SB=Self-Blame (untransformed scores range from 4-20); †$p<.05$; **$p<.01$; ***$p<.001$; [a] log transformed values

Table 2

Stepwise Regression Models Predicting Scores on Drive for Muscularity and Disordered Eating[a]

	B	SE B	β	*t*
Drive for Muscularity				
Constant	20.36	16.70		1.98†
IS[a]	16.70	6.25	.20	2.67**
Disordered Eating				
Step 1				
Constant	.16	.12		1.32
SB[a]	.77	.15	.39	5.17***
Step 2				
Constant	-.48	.25		-1.91
SB[a]	.53	.17	.27	3.21**
IS[a]	.50	.17	.24	2.87**

Note: Note: R^2=.05 for Drive for Muscularity;

For Disordered Eating, R^2=.15 for Step 1; ΔR^2=.05 for Step 2 (*p*s<.001);

IS=Internalized Shame; SB=Self-Blame; †*p*<.05; **p*<.01; ***p*<.001

[a] log transformed values