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Muscularity versus Leanness: An Examination of Body Ideals and Predictors of Disordered Eating in Heterosexual and Gay College Students

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Abstract

The aim of the current study was to add to the growing body of research on men with eating disorders by examining the association between different types of body dissatisfaction (muscularity and body fat) and disordered eating in heterosexual and gay men. Two hundred four participants (over one-third were gay) completed measures assessing disordered eating, muscularity and body fat dissatisfaction, and sexual orientation. Body fat dissatisfaction, but not muscularity dissatisfaction, predicted disordered eating, dietary restraint, and concerns about weight and eating in gay and heterosexual men. These findings were consistent across all measures of body fat and muscularity dissatisfaction, providing stronger evidence that body fat dissatisfaction may be a greater risk factor for disordered eating in both gay and heterosexual college aged men than muscularity dissatisfaction.

Keywords

eating disorders; body image; body dissatisfaction; muscularity; leanness; human males; sexual orientation

Although the majority of eating disorders occur in women, men account for 10-15% of eating disorder cases (Carlat, Camargo, & Herzog, 1997). The aim of the current study was to examine potential predictors of disordered eating in heterosexual and gay men, as well as to investigate body ideals among these groups.

Contemporary Western culture has become increasingly focused on male bodies. The changing value of the male physique is evident in the number of objectifying portrayals of men in the media, which has dramatically increased (Leit, Pope, & Gray, 2000; Pope et al., 2000). Given the increasing discrepancy between current body ideals emphasized in the media and the body size of average men (Tiggemann, Martins, & Kirkbride, 2007), it is not surprising that men are joining their female cohorts in the experience of body dissatisfaction (Heinberg, 1996; Kaminski, Chapman, Haynes, & Own, 2005; Siever, 1994).

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Unlike their female counterparts who are motivated to be thin (Salusso-Deonier, Markee, & Pederson, 1993), heterosexual men are more likely to associate attractiveness with increased muscle definition (Bordo, 1999). One reason men place importance on muscle is its association with masculinity and status (Kimmel & Mahalik, 2004; McCreary & Sasse, 2000). From an evolutionary standpoint, it follows that heterosexual men may desire to appear more muscular, as heterosexual women have been found to be attracted to cues of dominance and status (e.g., Buss & Barnes, 1986). Indeed, in focus group interviews, boys and young men reported they felt there was a social expectation for men to be muscular, as muscle was believed to be associated with social power and self-confidence (Kimmel & Mahalik, 2004; McCreary & Sasse, 2000).

In addition to evolutionary explanations, sociocultural pressures must be considered, as several studies have noted how male body image has changed along with cultural and societal values. For instance, *Playgirl* centerfolds have become increasingly muscular over time (Leit, Pope, & Gray, 2000). Moreover, boys are inculcated with the masculine muscular ideal at a young age by playing with toy action figures (i.e., GI Joe). Notably, these action figures appear to be increasing in muscularity over the decades (Pope, Olivardia, Gruber, and Borowiecki, 1999) and portray builds impossible to achieve—in terms of physical dimensions, if these toys were life-sized they would be larger than the average bodybuilder (Andersen & DiDomenico, 1992). Further, internalization of media ideals has been found to be a stronger predictor of drive for muscularity among heterosexual men than BMI (Daniel & Bridges, 2009), and exposure to ideal male bodies has been found to lead to increased muscle dissatisfaction (Agliata & Tantleff-Dunn, 2004).

In contrast to heterosexual men, leanness appears to be a particularly salient factor among gay men. Research has shown that, like heterosexual men, gay men value physical attractiveness (Bailey, Gaulin, Agyei, & Gladue, 1994) and youth (Kenrick, Keefe, Bryan, Barr, & Brown, 1995) in their romantic partners. Because youth is associated with thinness in Western societies—as people tend to gain weight as they age (e.g., Cohen, 1989; Keel, Baxter, Heatherton & Joiner, 2007)—gay men may be motivated to pursue thinness and leanness in order to attract a partner. Recent research supports this idea as gay men, but not heterosexual men, were found to indicate more restricted eating after encountering potential competitors for mates (Li, Smith, Griskevicius, Cason, & Bryan, 2010). Additionally, gay men may be more susceptible to sociocultural pressures and media images promoting thinness (Strong et al., 2001) and they have been found to report greater public self-consciousness about their body and more social pressure to diet than heterosexual men (Cohane & Pope, 2001). Williamson and colleagues (1998) found that when presented with figure drawings, gay men chose significantly smaller ideal figure sizes compared to heterosexual men. In addition, findings from earlier research concluded that gay men, as compared to heterosexual men, idealize a thinner body shape, are more concerned about their weight, and report a greater fear of becoming fat (Strong, Williamson, Netemeyer, & Greer 2001; Yelland & Tiggemann, 2003).

We suggest that due to various sociocultural and evolutionary factors heterosexual men may be more concerned with appearing muscular, whereas gay men may be more motivated to appear lean. Accordingly, we hypothesized that body fat dissatisfaction would predict disordered eating attitudes and behaviors in gay men, whereas muscularity dissatisfaction would predict disordered eating attitudes and behaviors in heterosexual men. Additionally, we examined the body types that heterosexual and gay men indicated as attractive to potential partners.

Method

Participants

Participants were 204 male college students recruited from a large southeastern university (mean age = 20.49, $SD = 3.27$). Seventy-five (34%) participants were gay. Heterosexuals were recruited from psychology classes and given course credit for participation. Gay men were recruited by handing out and posting flyers at gay venues; additionally, to bolster recruitment efforts, they were paid \$10. The ethnic/racial composition of this sample was representative of the university, and as follows: 83% Non Hispanic and 17% Hispanic; 78% Caucasian, 7% Black, 8% Asian, 1% American Indian, 4% more than one race (2% did not report a race).

Measures

Kinsey Scale of Sexual Orientation—This is a dimensional scale of sexual orientation (Kinsey, Pomeroy, Martin, & Gebhard, 1953). Participants were asked to choose a number corresponding to their sexual orientation, where ‘0’ represents exclusively heterosexual and ‘6’ represents exclusively homosexual. Participants with ratings of 0 - 2 were classified as heterosexual; participants with ratings of 3 - 6 as homosexual.

The Bodybuilder Image Grid Original—(BIG-O; Hildebrandt, Langenbucher, & Schlundt, 2004). The BIG-O is a two-dimensional figure rating scale designed to measure perceptual body image disturbance in males and perceived attractiveness of the male body. The BIG-O includes a grid of male figures, which vary in leanness (Y-axis) and muscularity (X-axis). Along the rows, body fat increases from 1 (extremely low body fat) to 6 (extremely high body fat); along the columns muscle mass increases from 1 (extremely low muscle mass) to 5 (extremely high muscle mass). Discrepancy indices measuring perceptual disturbance for both body fat and muscle mass are calculated by taking the absolute value of the subtracted corresponding column and row scores (i.e., current fat – ideal fat = amount of body fat dissatisfaction; ideal muscle mass – current muscle mass = amount of muscularity dissatisfaction). When completing the BIG-O, participants were asked to pick the figure that most closely represented their current figure, the figure they would ideally like to have, and the figure that is most attractive to a potential mate.

Male Body Attitudes Scale—The MBAS is a 29-item self-report measure of men’s attitudes towards their bodies (Tylka, Bergeron, & Schwartz, 2005). In the current study, we utilized the Muscularity and Body Fat subscales and alpha coefficients were: Muscularity (.80) and Body Fat (.86).

Eating Disorders Examination Questionnaire-4—The EDEQ-4 is a 36-item self-report measure adapted from the Eating Disorder Examination Interview (Fairburn & Beglin, 1994; Fairburn, Cooper, & Wilson, 1993) that measures symptoms of eating disorders (e.g., self-induced vomiting), weight concerns, shape concerns, eating concerns, and restraint. The reliability for the global score was .80; reliability for the subscales was: restraint (.77), eating concern (.67), shape concern (.90), weight concern (.80).

Results

Sample Characteristics

Gay men reported higher levels of disordered eating on the global score and all subscales of the EDEQ-4. As measured by the MBAS, gay men also reported significantly more body fat dissatisfaction than heterosexual men; the groups did not differ on amount of muscularity or body fat dissatisfaction reported (see Table 1). The mean EDEQ-4 global score was 1.16

($SD = 0.96$); however, 40 participants had scores over 2.08, placing them above the 85% percentile for men for undergraduate men (Lavender, De Young, & Anderson, 2010).

Body Ideals for Heterosexual and Gay Men

To examine body ideals, we used the BIG-O. For muscularity, larger values indicate more muscle; for leanness, smaller values indicate less body fat. In terms of their ideal shape, heterosexual men reported preferring more muscular ideal figures for themselves than gay men did (heterosexual, $M = 3.38$, $SD = 0.74$; gay, $M = 2.80$, $SD = 0.79$), $t(202) = 5.21$, $p < .001$; however, there was not a significant difference between the groups in terms of how lean they would ideally like to be (heterosexual, $M = 1.93$, $SD = 0.64$; gay, $M = 2.10$, $SD = 0.73$), $t(202) = -1.80$, $p = .07$.

Potential Partners' Preferred Body Ideals

Heterosexual and gay men did not differ in terms of what they reported their respective potential partners found attractive for both muscularity (attractive to heterosexual partner, $M = 2.75$, $SD = 1.12$; attractive to gay partner, $M = 3.00$, $SD = 0.74$), $t(202) = -1.62$, $p = .11$, and leanness (attractive to heterosexual partner, $M = 1.89$, $SD = 0.63$; attractive to gay partner, $M = 1.92$, $SD = 0.72$), $t(202) = -0.28$, $p = .78$. However, there were differences between participants' own ideal body type and what they thought a potential mate would find attractive. Heterosexual men desired an even more muscular figure than they thought a potential mate would want (ideal, $M = 3.38$, $SD = 0.74$; attractive to partner, $M = 2.75$, $SD = 1.12$), $t(127) = 5.95$, $p < .001$; there was no significant difference between how lean heterosexual men ideally wanted to be and how lean they thought a potential mate would want them to be (ideal, $M = 1.93$, $SD = 0.64$; attractive to partner, $M = 1.89$, $SD = 0.63$), $t(127) = 5.95$, $p = .40$. The opposite pattern was found for gay men. There was no significant difference between how muscular gay men ideally wanted to be and how muscular they thought a potential mate would want them to be (ideal, $M = 2.80$, $SD = 0.79$; attractive to partner, $M = 3.00$, $SD = 0.74$), $t(73) = -1.78$, $p = .08$; but gay men did report that a potential mate would want them to be leaner than they would ideally like to be (ideal, $M = 2.10$, $SD = 0.73$; attractive to partner, $M = 1.92$, $SD = 0.72$), $t(73) = 2.57$, $p = .01$.

Predictors of Disordered Eating for Gay Men

We conducted a series of simultaneous regression equations using both muscle dissatisfaction and body fat dissatisfaction (as measured by the BIG-O) as the predictor variables and the EDEQ-4 subscales as the criterion variables. As predicted, only the body fat dissatisfaction variable remained significant in predicting EDEQ-4 global score ($\beta = .50$, $t = 4.81$, $p < .001$, $f^2 = 0.32$), weight concern ($\beta = .50$, $t = 4.79$, $p < .001$, $f^2 = 0.31$), shape concern ($\beta = .57$, $t = 5.76$, $p < .001$, $f^2 = 0.46$), eating concern ($\beta = .32$, $t = 2.88$, $p = .005$, $f^2 = 0.14$), and restraint ($\beta = .26$, $t = 2.28$, $p = .03$, $f^2 = 0.07$; see Table 2.)

Next we used the MBAS Low Body Fat scale and the MBAS Muscularity scale in the prediction of disordered eating attitudes. As predicted, Low Body Fat, but not Muscularity, predicted EDEQ-4 global score ($\beta = .82$, $t = 11.74$, $p < .001$, $f^2 = 1.99$), weight concern ($\beta = .80$, $t = 10.97$, $p < .001$, $f^2 = 1.7$), shape concern ($\beta = .82$, $t = 12.39$, $p < .001$, $f^2 = 2.30$), eating concern ($\beta = .65$, $t = 7.14$, $p < .001$, $f^2 = 0.72$), and restraint ($\beta = .53$, $t = 5.19$, $p < .001$, $f^2 = 0.39$). See Table 3.

Predictors of Disordered Eating for Heterosexual Men

We again conducted a series of simultaneous regression equations using both muscle dissatisfaction and body fat dissatisfaction (as measured by the BIG-O) as the predictor variables and the EDEQ-4 subscales as the criterion variables. Contrary to our prediction,

only the body fat dissatisfaction variable remained significant in predicting EDEQ-4 global score ($\beta = .59, t = 7.51, p < .001, f^2 = 0.49$), weight concern ($\beta = .56, t = 6.84, p < .001, f^2 = 0.40$), eating concern ($\beta = .55, t = 6.71, p < .001, f^2 = 0.38$), and restraint ($\beta = .42, t = 4.97, p < .001, f^2 = 0.31$). Both body fat dissatisfaction and muscularity dissatisfaction remained significant in the prediction of shape concern (Body Fat Dissatisfaction: $\beta = .50, t = 5.92, p < .001$; Muscle Dissatisfaction: $\beta = .18, t = 2.11, p = .04$; see Table 2).

This pattern held when we used the MBAS Low Body Fat scale and the MBAS Muscularity scale as predictors. Low Body Fat, but not Muscularity, predicted EDEQ-4 global score ($\beta = .78, t = 14.1, p < .001, f^2 = 1.7$), weight concern ($\beta = .68, t = 10.09, p < .001, f^2 = 0.92$), eating concern ($\beta = .71, t = 10.77, p < .001, f^2 = 1.00$), and restraint ($\beta = .56, t = 7.24, p < .001, f^2 = 0.45$) in heterosexual men. Both Low Body Fat and Muscularity remained significant in the prediction of shape concern (Low Body Fat: $\beta = .73, t = 12.42, p < .001$; Muscularity: $\beta = .18, t = 3.07, p = .003$; see Table 3).

Discussion

In accordance with a sociocultural and evolutionary perspective, we predicted that muscularity dissatisfaction would elicit greater eating concerns among heterosexual men, whereas body fat dissatisfaction would be associated with more disordered eating among gay men. Consistent with the hypothesis, gay men in the current sample had higher levels of disordered eating and reported greater levels of body fat dissatisfaction compared to heterosexual men. Body fat dissatisfaction but not muscularity dissatisfaction, predicted disordered eating in gay men, including increased dietary restraint and concerns about weight, shape, and eating. However, contrary to our hypotheses, body fat but not muscularity dissatisfaction predicted increased dietary restraint and eating and weight concerns in heterosexual men.

One explanation for the lack of association between muscularity dissatisfaction and disordered eating in men may be that drive for muscularity is associated with desire for a larger body type, and therefore less associated with restrictive eating behavior. However, the desire for a larger body type could be associated with other types of problematic behaviors, like steroid usage, overeating, or binge eating. A potentially important avenue for future research would be to look at the association between muscularity dissatisfaction and weight gaining behaviors, like supplement usage, intravenous steroid use, or protein rich diets.

In terms of their own ideal body types, we found that compared to gay men, heterosexual men preferred a more muscular figure; the groups did not differ in terms of how lean they ideally wanted to be. However, there were differences between participants' own ideal body type and what they thought a potential partner would find attractive, and intriguingly, the pattern of results differed for homosexual and heterosexual men. Heterosexual men desired a more muscular figure than they thought a potential partner would want. On the other hand, gay men thought a potential partner preferred a leaner figure than they ideally desired for themselves. This discrepancy may motivate gay men to restrict in order to achieve the ideal they believe is attractive to a potential partner, thus putting them at increased risk for disordered eating.

Strengths of the current study include a large sample of both gay and heterosexual men, examination of body fat and muscularity dissatisfaction as separate predictors of disordered eating, and the use of body image measures specifically designed for men. Limitations include the cross-sectional design and the use of self-report data and a convenience sample of college students. Additionally, these results might be more reflective of the largest racial-ethnic group of Non-Hispanic Whites.

Overall, this study highlights the influence of dissatisfaction with body fat on disordered eating regardless of sexual orientation and highlights the importance of examining such factors in men. Future research could examine whether body fat and muscularity dissatisfaction play similar roles in the prediction of disordered eating in other subsamples of men, including body builders or elite athletes.

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Table 1
Group differences between heterosexual and gay men on measures of interest

Measure	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>
EDEQ-4 Global				
Heterosexual	0.87	0.77		
Gay	1.65	1.05	-6.11	<.001
EDEQ-4 Restraint				
Heterosexual	0.95	1.12		
Gay	1.68	1.11	-4.54	<.001
EDEQ-4 Eating Concern				
Heterosexual	0.32	0.45		
Gay	0.75	0.84	-4.74	<.001
EDEQ-4 Shape Concern				
Heterosexual	1.30	1.10		
Gay	2.34	1.50	-5.70	<.001
EDEQ-4 Weight Concern				
Heterosexual	0.92	0.97		
Gay	1.83	1.37	-5.57	<.001
MBAS Muscularity				
Heterosexual	32.47	8.37		
Gay	31.96	9.13	.40	.690
MBAS Body Fat				
Heterosexual	21.90	8.57		
Gay	29.08	10.34	-5.32	<.001
BIG-O Muscle Dissatisfaction				
Heterosexual	0.87	0.65		
Gay	0.91	0.72	-0.43	.67
BIG-O Body Fat Dissatisfaction				
Heterosexual	0.91	0.89		
Gay	1.09	0.90	-1.45	.15

Table 2
Muscle dissatisfaction and body dissatisfaction as measured by the Bodybuilder Image Grid in the prediction of the Eating Disorder Examination Questionnaire

Eating Disorder Examination Questionnaire: Global									
	Gay Men				Heterosexual Men				
	β	SE	t	p	β	SE	t	p	
Variable (Constant)		.23	3.59	.001		.13	2.85	.005	
BIG muscle dissatisfaction	.13	.15	1.29	.20	.04	.09	0.57	.59	
BIG body fat dissatisfaction	.50	.12	4.81	<.001	.59	.07	7.51	<.001	

Eating Disorder Examination Questionnaire: Weight Concern									
	Gay Men				Heterosexual Men				
	β	SE	t	p	β	SE	t	p	
Variable (Constant)		.30	2.78	.007		.17	1.77	.08	
BIG muscle dissatisfaction	.09	.20	0.88	.38	.06	.12	0.72	.47	
BIG body fat dissatisfaction	.50	.16	4.79	<.001	.56	.09	6.84	<.001	

Eating Disorder Examination Questionnaire: Shape Concern									
	Gay Men				Heterosexual Men				
	β	SE	t	p	β	SE	t	p	
Variable (Constant)		.32	3.29	.002		.20	2.35	.02	
BIG muscle dissatisfaction	.14	.21	1.39	.17	.18	.15	2.11	.04	
BIG body fat dissatisfaction	.57	.17	5.76	<.001	.50	.11	5.92	<.001	

Eating Disorder Examination Questionnaire: Eating Concern									
	Gay Men				Heterosexual Men				
	β	SE	t	p	β	SE	t	p	
Variable (Constant)		.20	0.95	.35		.08	0.30	.76	
BIG muscle dissatisfaction	.22	.13	1.94	.06	.07	.06	0.89	.38	

Eating Disorder Examination Questionnaire: Eating Concern						
	Gay Men			Heterosexual Men		
	β	SE	t	p	β	t
BIG body fat dissatisfaction	.32	.11	2.88	.005	.55	.04
						6.71
						< .001

Eating Disorder Examination Questionnaire: Restraint						
	Gay Men			Heterosexual Men		
	β	SE	t	p	β	t
Variable (Constant)			2.7	4.62		3.34
				< .001		.21
BIG muscle dissatisfaction	.05	.18	0.39	.70	-.14	.15
						-1.66
BIG body fat dissatisfaction	.26	.14	2.28	.03	.42	.11
						4.97
						< .001

Table 3

Muscle dissatisfaction and body dissatisfaction as measured by the Male Body Attitudes Scale in the prediction of the Eating Disorder Examination Questionnaire

Eating Disorder Examination Questionnaire: Global						
	Gay Men			Heterosexual Men		
	β	SE	t	p	β	SE
Variable (Constant)						
	.32		-2.23	.03	.19	
					-4.82	<.001
MBAS muscularity	-.02	.008	-0.33	.74	.09	.005
					1.53	.13
MBAS low body fat	.82	.007	11.74	<.001	.78	.005
					14.01	<.001

Eating Disorder Examination Questionnaire: Weight Concern						
	Gay Men			Heterosexual Men		
	β	SE	t	p	β	SE
Variable (Constant)						
	.43		-1.91	.06	.29	
					-3.83	<.001
MBAS muscularity	-.10	.01	-1.31	.20	.09	.008
					1.37	.17
MBAS low body fat	.80	.01	10.97	<.001	.68	.008
					10.09	<.001

Eating Disorder Examination Questionnaire Shape: Concern						
	Gay Men			Heterosexual Men		
	β	SE	t	p	β	SE
Variable (Constant)						
	.43		-3.65	.001	.29	
					-5.38	<.001
MBAS muscularity	.08	.01	1.16	.25	.18	.01
					3.07	.003
MBAS low body fat	.82	.01	12.39	<.001	.73	.01
					12.42	<.001

Eating Disorder Examination Questionnaire Eating: Concern						
	Gay Men			Heterosexual Men		
	β	SE	t	p	β	SE
Variable (Constant)						
	.34		-1.85	.07	.13	
					-3.60	<.001
MBAS muscularity	-.06	.009	-0.66	.51	-.01	.003
					-0.12	.90

Eating Disorder Examination Questionnaire Eating: Concern								
	Gay Men				Heterosexual Men			
	β	SE	t	p	β	SE	t	p
MBAS low body fat	.65	.008	7.14	< .001	.71	.003	10.77	< .001

Eating Disorder Examination Questionnaire: Restraint								
	Gay Men				Heterosexual Men			
	β	SE	t	p	β	SE	t	p
Variable (Constant)		.49	0.33	.74		.38	-1.40	.16
MBAS muscularity	-.03	.01	-0.26	.79	-.02	.01	-0.31	.76
MBAS low body fat	.53	.01	5.19	< .001	.56	.01	7.24	< .001