

# Homosexuality as a Risk Factor for Eating Disorder Symptomatology in Men

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Sexual orientation, body shame, body mass index (BMI), weight discrepancy and age were investigated as risks for eating disorder symptomatology in gay and heterosexual men ( $N = 230$ ). Higher body shame (the dominant predictor) was associated with higher eating disorder symptomatology. Body shame appeared to be an expression of muscularity. BMI was the next strongest predictor, with heavier men reporting greater weight discrepancy, and in turn, eating disorder symptomatology. Overall, gay men were at greater risk for eating disorder symptomatology than heterosexual men, and a thin-muscular body ideal applies to younger rather than older gay men. These findings have important implications for intervention, prevention and promotion of men's health.

*Keywords:* gay male body ideal, sexual orientation, body image, eating disorder symptomatology, men, age

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Empirical research on body image and eating problems has largely focused on women's experiences (e.g., Boisvert & Harrell, 2009; Frederick & Grow, 1996; Fredrickson, Roberts, Noll, Quinn, & Twenge, 1998; McKinley, 1999). More recently, researchers have recognized that men, too, experience these problems (e.g., Boroughs & Thompson, 2002; Duggan & McCreary, 2004; Kaminski, Chapman, Haynes, & Own, 2005; Yelland & Tiggemann, 2003). Because men's body image and eating problems have not been addressed in the scientific literature nearly as extensively as for women (Pope, Philips, & Olivardia, 2000), researchers have begun exploring issues unique to men, particularly the relationship of sexual orientation and eating disorder symptomatology (e.g., Brand, Rothblum, & Solomon, 1992; Morrison, Morrison, & Sager, 2004; Russell & Keel, 2002; Strong, Williamson, Netemeyer, & Geer, 2000).

Though the degree and nature of this relationship varies, gay men appear to be at greater risk for disordered eating (e.g., Russell & Keel, 2002; Wichstrom, 2006;

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Williamson & Hartley, 1998; Yager, Kurtzman, Landsverk, & Wiesmeier, 1988) and body image disturbances compared to heterosexual men (e.g., Beren, Hayden, Wilfley, & Grilo, 1996; Siever, 1994; see also Heffernan, 1994; Williamson, 1999). Gay men place greater emphasis on physical appearance when selecting a mate (Williamson & Hartley, 1998), are more dissatisfied with their current weight (Silberstein, Mishkind, Striegel-Moore, & Timko, 1989), and their bodies (Beren et al., 1996; Kaminski et al., 2005; Morrison, Kalin, & Morrison, 2004; Russell & Keel, 2002; Yager et al., 1988) display higher body image disturbance (Beren et al., 1996; Herzog, Newman, & Warshaw, 1991; Schneider, O'Leary, & Jenkins, 1995; Silberstein et al., 1989; Williamson & Hartley, 1998), identify a leaner body ideal and identify significantly smaller figure sizes when presented with figure drawings (Williamson & Hartley, 1998), indicate a significantly greater discrepancy between their real and ideal figure size (Siever, 1994) along with a significantly lower body mass indexes (BMIs) (Herzog et al., 1991; Strong et al., 2000), report lighter body weights (Herzog et al., 1991), significantly smaller upper torso sizes (Boroughs & Thompson, 2002), report dieting more often (Williamson & Hartley, 1998), more eating disorder symptomatology (Gettelman & Thompson, 1993; Schneider et al., 1995; Siever, 1994; Wichstrom, 2006; Williamson & Hartley, 1998; Yager et al., 1988; Yelland & Tiggemann, 2003), and engage in more steroid use and excessive exercise (Boroughs & Thompson, 2002; Dillon, Copeland, & Peters, 1999). While these results establish homosexuality as a risk factor for disordered eating in men, what remains unclear is why these differences exist. From an etiological perspective, how is homosexuality a causal pathway leading to disordered eating in men?

One explanation is that the dominant heterosexual culture and gay culture each impose demanding social norms concerning standards of weight and physical appearance. Sociocultural theory posits that sociocultural influences, particularly media images, are a powerful source of body image and eating problems in women, and increasingly, in men (Morrison, Kalin et al., 2004). Today's standard of attractiveness for men is a muscular build characterized by a well-developed upper body and a slender lower body (McCreary & Sasse, 2000). Advertisements capitalize on men's physical insecurities and disseminate the message that men constantly need to improve their bodies as their physical appearance defines their identity. While messages from the dominant heterosexual culture prescribe men to self-evaluate in aesthetic and erotic terms (Rohlinger, 2002), the same messages emanating from gay culture may put gay men at greater risk for disordered eating than heterosexual men because of a focus on weight and physical appearance.

Some gay writers (e.g., Atkins, 1998; Harris, 1997) have observed that the commodification and objectification of the male body in dominant culture is beginning a slow "drip" into collective gay consciousness. Consequently, gay men are laboring under increased social and media pressure to meet an ever more realistic body ideal. Gay men, in striving to be physically attractive to other men (Brand et al., 1992; Siever, 1994; Yelland & Tiggemann, 2003), may have a "higher valuation on thinness" (Anderson, 1999, p. 208) and a body ideal that significantly differs from heterosexual men.

Research has shown that the gay male body ideal typically emphasizes lower weight and physical attractiveness largely based on muscular leanness (Boroughs & Thompson, 2002; Yelland & Tiggemann, 2003). The fact that the gay male body ideal involves being thin but also muscular places gay men at greater risk for disordered eating (Yelland & Tiggemann, 2003). Gay men have been shown to be more susceptible to media images promoting thinness; they report greater social pressure to diet, believing that their partners prefer a thinner figure (Beren et al., 1996; Boroughs & Thompson, 2002; Duggan & McCreary, 2004). Gay men may seek a gay male body ideal standard that is so unrealistic it leads them to develop body image and eating problems (Duggan & McCreary; Herzog et al., 1991; Siever, 1994; Silberstein et al., 1989).

Women, having been exposed to advertisements for decades, have learned to ignore or confront the impossible ideals of beauty promoted in the mass media. Men, on the other hand, having been exposed to such advertising only in the last few years may be more vulnerable to messages for thinness and/or muscularity (Pope et al., 2000). Constant exposure to an ideal body type (which is often unrealistic and impossible to achieve) can make men more sensitive and conscious about their bodies and can evoke comparisons between themselves and unrealistic media images (Beren et al., 1996; Hatoum & Belle, 2004). That men are socially prohibited from openly discussing body-related issues may evoke a sense of shame or emasculation while they seek to emulate the body ideal. Some researchers (e.g., Pope et al., 2000) suggest that gay men have even greater problems with body image and eating, as they are desirous of a muscular body because it "proves" to themselves and to others that they are "real" men. Because the mass media promotes a thin-muscular ideal, one that is impossible for "real" men to obtain (Lorenzen, Grieve, & Thomas, 2004), gay men may be at greater risk for negative psychological experiences than heterosexual men. Gay men may look at media images and, believing that they need to achieve "bodily perfection" (Morrison, Morrison, & Hopkins, 2003, p. 111), may experience self-discrepancy and the negative psychological experience of body shame.

Women frequently experience a sense of body shame due to their "deviation" from culturally prescribed standards for the female body, e.g., thinness (see McKinley, 1998, 1999; McKinley & Hyde, 1996). While negative psychological experiences associated with deviation from culturally prescribed standards for the male body, e.g., muscularity, have also been observed in men (e.g., Carpenter, Hasin, Allison, & Faith, 2000; Harmatz, Gronendyke, & Thomas, 1985), body shame is not amongst them. Body shame reflects the degree to which an individual internalizes body-related cultural expectations, e.g., thinness, that are linked to the belief that achieving these standards is realistically possible, and that one is a "bad" person if these prescribed standards are not met (McKinley & Hyde, 1996). The proposed link between higher body shame and greater risk for disordered eating has received empirical support; body shame has been shown to have positive direct effects on disordered eating in women (e.g., Boisvert, 2006; Frederick & Grow, 1996; Fredrickson et al., 1998; Noll & Fredrickson, 1998). As a predictor of eating disorder symptomatology, body shame has not been studied in men. We hypothesized that gay men will have higher body shame compared to heterosexual men, and, through this link, be at greater risk for disordered eating.

Given the findings that gay men report significantly lower BMIs and lighter body weights (Herzog et al., 1991; Strong et al., 2000), we hypothesized that gay men will report lower BMIs than heterosexual men. Based on the literature, we also hypothesized that despite their lower BMIs, gay men will experience greater discrepancy between their actual and ideal weight compared to heterosexual men. This latter hypothesis is grounded in research showing that gay men identify significantly smaller figure sizes, reporting a greater discrepancy between their real and ideal figure size (Siever, 1994; Williamson & Hartley, 1998). These proposed linkages of BMI and weight discrepancy are supported by studies finding that eating disorder symptomatology is mediated by body shame in women (Boisvert, 2006; Fredrickson et al., 1998; McKinley, 1999; Noll & Fredrickson, 1998). These linkages have not yet been studied in men, but we hypothesize that these linkages will put gay men at increased risk for disordered eating.

Research suggests that older age might increase risk for disordered eating (Boisvert & Harrell, 2009; Gupta, 1995; Gupta & Schork, 1993). While empirical research on women has shown that younger than older women experience more body shame and a consequent increase in disordered eating (McKinley, 1999; Tiggemann & Lynch, 2001), no such research exists for men. Given gay culture's emphasis on maintaining a fit, trim and youthful appearance (Atkins, 1998), it is possible that aging may be more damaging for gay men than for heterosexual men because of their greater investment in achieving the gay male body ideal. Based on the literature, we hypothesized that older gay men will have greater BMIs, weight discrepancy and body shame, and, in turn, greater eating disorder symptomatology than younger gay men.

The purpose of the present exploratory study was to test a path model that included sexual orientation along with body shame, BMI, weight discrepancy and age as risk factors for eating disorder symptomatology, shown in Figure 1. The model consisted of the hypothesized direct effects of sexual orientation, body shame, BMI, weight discrepancy and age on eating disorder symptomatology; greater body shame, BMI and weight discrepancy should increase symptomatology. The model also consisted of the hypothesized indirect effects of sexual orientation and age on eating disorder symptomatology, mediated by their impact on body shame, BMI and weight discrepancy. This study differed from previous research by: (1) testing an original path model of eating disorder symptomatology, (2) using a sample of gay and heterosexual men, and (3) using a sample of Canadian men of diverse age and ethnicity.

## Method

### *Participants*

Participants included a nonclinical sample of undergraduate men ( $N = 230$ ) at a large Western Canadian university. Participants ranged in age from 18 to 53 years ( $M = 21.86$ ,  $SD = 3.39$ ). Ninety-three percent ( $n = 213$ ) of the men identified themselves heterosexual while 5.7% ( $n = 13$ ) identified themselves as homosexual (gay [ $n = 10$ ,

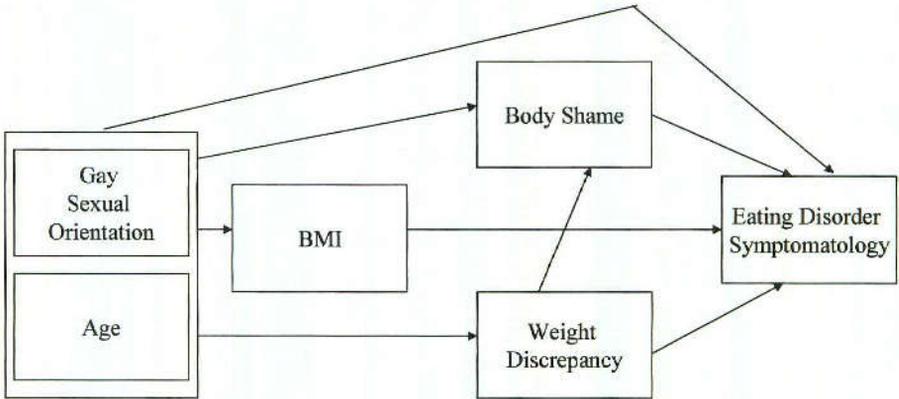


Figure 1. Hypothesized path model.

4.4%] or bisexual [ $n = 3$ , 1.3%]).<sup>1</sup> The majority of the men identified themselves as White (71.3%), followed by Asian (17.0%), East Indian (5.2%), Other (2.6%), Black (2.2%), and Aboriginal (1.3%). None of the men identified themselves as Hispanic. Ethnicity was not analyzed.

### Measures

*Sexual orientation.* Participants reported their sexual orientation as heterosexual, homosexual (gay) or bisexual. Sexual orientation was measured as a categorical variable.

*Age.* Participants reported their age. Age was measured as a continuous variable.

*Body mass index (BMI).* Participants reported their weight and height. BMI was calculated by dividing weight (in kilograms) by height squared (in meters):  $BMI =$

<sup>1</sup>Consistent with previous research (e.g., Strong et al., 2000), due to the disputed definitions of homosexuality, it was feared that omitting bisexual men from analyses would result in an exclusion of a significant representation of the gay population as a whole. For this reason, bisexual men were included in the gay category. While the sample of gay and bisexual men is small, relative to the larger number of heterosexual men, the ordinary least squares multiple regression analyses carried out to test the proposed path model, along with the associated tests of statistical significance, adjust for this small sample. That is to say, the sample was statistically sufficient for the present analyses. The reader, however, should be cautious in making inferences from these small samples to the larger populations of heterosexual and gay men.

weight (kg)/height<sup>2</sup> (m) (Garrow & Webster, 1985). BMI was measured as a continuous variable.

*Weight discrepancy.* Participants reported their actual and ideal weights. Weight discrepancy was calculated by subtracting participants' ideal weight from their actual weight: weight discrepancy = actual weight - ideal weight (McKinley, 1998). Weight discrepancy was measured as a continuous variable.

*Body shame.* Body shame was measured as a continuous variable using the body shame subscale of the Objectified Body Consciousness scale (OBC; McKinley & Hyde, 1996). This subscale consists of 8 items related to feelings of shame associated with the failure of one's body to conform to an ideal (McKinley & Hyde, 1996). Items are rated on a Likert-style scale with response categories ranging from a value of one (strongly disagree) to seven (strongly agree). A higher score reflects higher body shame. This subscale demonstrated adequate internal consistency for the present sample. The Cronbach alpha, a measure of reliability, was .84.

*Eating disorder symptomatology.* Eating disorder symptomatology was measured as a continuous variable using three subscales of the Eating Disorder Inventory (EDI; Garner, Olmsted, & Polivy, 1983): drive for thinness, bulimia and body dissatisfaction. Items from each of these subscales were rated on a Likert-style scale with response categories ranging from a value of one (never) to six (always). A higher score reflects greater eating disorder attitudes and behaviors. As with previous research (e.g., Noll & Fredrickson, 1998), the subscale scores were combined to create a cumulative index. This cumulative index – referred to simply as “EDI” – demonstrated adequate internal consistency for the present sample. The Cronbach alpha was .89.

### *Procedure*

To be eligible for the study, participants were required to be English speaking adult men (18 years or older). Informed consent was obtained from all participants. During class time, participants completed a questionnaire comprised of demographic questions and standardized measures of body shame and eating disorder symptomatology. Participants did not receive any compensation. Ethical approval was received from an Institutional Review Board (IRB).

### *Analyses*

All analyses were performed using SPSS. Ordinary least squares (OLS) regression analyses were performed to test the hypothesized prediction model shown in Figure 1, which postulates direct effects of sexual orientation, body shame, BMI, weight discrepancy and age on eating disorder symptomatology. As recommended by Kline (1998), all insignificant paths were “trimmed,” i.e., dropped from the path model, and

all indirect effects were calculated by adding the products of the significant path coefficients.

## Results

### *Descriptive Statistics and Correlations*

Table 1 shows means, standard deviations and correlations. Gay men had significantly lower BMIs ( $M = 21.83$ ,  $SD = 2.86$ ) than heterosexual men ( $M = 23.83$ ,  $SD = 2.57$ ). Gay men reported higher EDI scores ( $M = 54.69$ ,  $SD = 12.06$ ) than heterosexual men ( $M = 46.08$ ,  $SD = 14.26$ ).

EDI scores were significantly associated to all of the predictors, except for age and sexual orientation. Body shame had the largest correlation ( $r = .59$ ,  $p < .01$ ), indicating that higher body shame was associated with higher EDI scores. Higher EDI scores were also associated with greater weight discrepancy ( $r = .31$ ,  $p < .01$ ), higher BMIs ( $r = .25$ ,  $p < .01$ ), and being gay ( $r = .14$ ,  $p < .05$ ). Body shame was not significantly related to any of the study variables. Weight discrepancy was positively related to BMI ( $r = .53$ ,  $p < .001$ ), with heavier men reporting greater weight discrepancy. BMI was significantly related to age ( $r = -.18$ ,  $p < .01$ ).

### *Path Analysis*

*Direct effects.* Figure 2 shows the “trimmed” path model. Forty-five percent of the variance in EDI was explained by body shame, BMI, weight discrepancy and age. Body shame was the dominant predictor of EDI ( $b = .58$ ,  $p < .001$ ). Weight discrepancy was also a significant predictor ( $b = .19$ ,  $p < .01$ ). Both sexual orientation ( $b = .11$ ,  $p < .05$ ) and BMI ( $b = .18$ ,  $p < .01$ ) were also significant predictors of EDI. Thus, gay men and

Table 1  
*Descriptive Statistics and Correlations for All Study Variables*

	Mean	SD	BS	BMI	WD	Age	Gay
EDI	46.61	14.21	.59**	.25**	.31**	-.02	.14*
BS	21.46	9.00		-.01	.06	-.07	.07
BMI	23.75	2.67			.53***	.23**	-.18**
WD	-4.07	11.47				.09	.09
Age	21.86	3.39					.05

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .

Notes: EDI = Eating Disorder Inventory; BS = Body Shame; BMI = Body Mass Index; WD = Weight Discrepancy. The negative value of weight discrepancy indicates that men believed, on average, that their actual weight was less than their ideal weight by 4.07 pounds.

those with greater body shame, BMI and weight discrepancy reported greater eating disorder symptomatology.

BMI ( $b = .58, p < .001$ ) and sexual orientation ( $b = .19, p < .001$ ) accounted for 31% of the explained variance in weight discrepancy, suggesting that men with higher BMIs, including gay men, had greater weight discrepancy. Being gay, with BMI controlled for, resulted in greater weight discrepancy ( $b = .19, p < .001$ ).

Age ( $b = .23, p < .001$ ) and sexual orientation ( $b = -.19, p < .001$ ) accounted for 8% of the explained variance in BMI, with older men reporting higher BMIs than younger men. Gay men had lower BMIs than heterosexual men.

*Indirect effects.* In addition to its direct effect on EDI, BMI had an indirect effect through the mediating variable weight discrepancy (.11); i.e., to the extent that men with high BMIs tended to perceive a discrepancy between their actual and ideal weights, their EDI scores increased. The combined effect of BMI was, therefore, equal to the sum of the direct and indirect effects, or .29.

Sexual orientation had direct positive effect on EDI ( $b = .09, p < .05$ ), with gay men having higher EDI scores than heterosexual men. This effect, however, was reduced by the negative impact of sexual orientation on BMI. Since gay men tended to have lower BMIs, this reduced weight discrepancy and EDI as well. As a result, the total effect of sexual orientation on EDI was equal to .09, with the link through BMI reducing the effect by -.02.

Though age did not have a direct effect on EDI, it had a cumulative net effect of .07. Thus, older men tended to have higher EDI scores to the extent that they had higher BMIs.

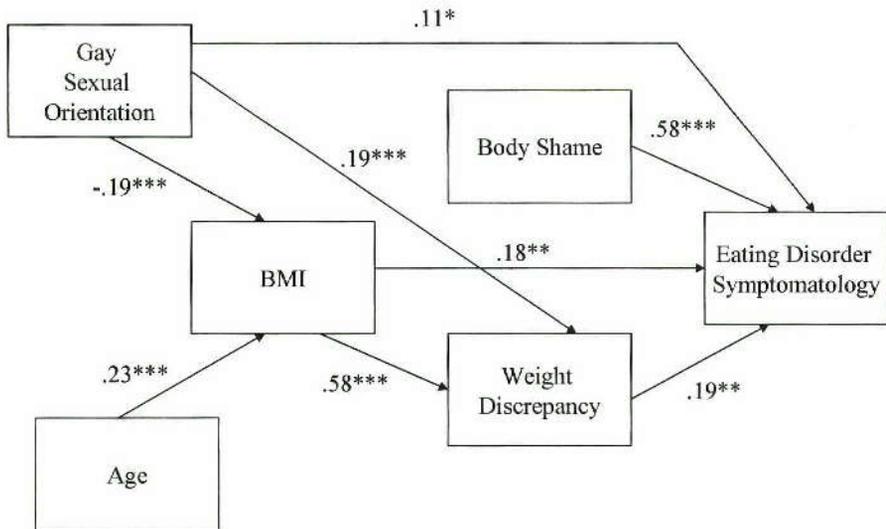


Figure 2. Trimmed path model.

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

## Discussion

The purpose of the present exploratory study was to test a path model that included sexual orientation along with body shame, BMI, weight discrepancy and age as risk factors for eating disorder symptomatology in men. The study findings support empirical research showing that compared to heterosexual men, gay men are at greater risk for eating disorder symptomatology (Russell & Keel, 2002; Williamson & Hartley, 1998; Yelland & Tiggemann, 2003). These results are consistent with sociocultural theory and gay writings postulating that gay subculture's imposition of demanding standards of weight and physical appearance and idealizing of thinness are evocative of disordered eating (e.g., Atkins, 1998; Morrison, Morrison et al., 2004). Credence is given to the belief that the commodification and objectification of the male body in the dominant culture is beginning a slow "drip" into collective gay consciousness (Atkins, 1998; Harris, 1997), with homosexual men laboring under increased social and media pressures to meet an ever more unrealistic body ideal. Although the health risks associated with restricting food intake for women are high, among gay men, this behavior could be even more dangerous if they engage in unhealthy eating practices, steroid use, or excessive exercise to stay muscular and slim; these are linked to body image and eating problems (Boroughs & Thompson, 2002; Dillon et al., 1999).

Interestingly, body shame was a "stand-alone" construct (and not a mediator). Neither sexual orientation, BMI, weight discrepancy nor age impacted body shame. The strong positive effects of body shame on eating disorder symptomatology support research in this area showing this direct effect in samples of women (e.g., Boisvert, 2006; Fredrickson et al., 1998; Noll & Fredrickson, 1998). Although direct effects of body shame on eating disorder symptomatology were found for men, the fact that body shame was a "stand-alone" construct suggests sex differences in body shame. Specifically, while body shame is an expression of internalized ideals of thinness for women, it appears to be an expression of internalized ideals of muscularity for men. There exists the possibility that men's experience of body shame may encompass ideals of thinness but with less emphasis than those for muscularity. Recently, Yelland and Tiggemann (2003) found that, compared to heterosexual men, gay men were more dissatisfied with their bodies and their muscularity, and, consequently, engaged in more efforts to achieve bigger muscles. At the same time, they also wished to be thinner and desired a lean and muscular body ideal. Additional research is needed in this area to tease out and establish the nuances of sex differences in body shame.

Specifically focusing on gay men, it may be that body shame is more than a simple expression of muscularity. For gay men, body shame may be an expression of muscularity but might also reflect elements of sex role orientation, e.g., masculinity, and/or sexual orientation, i.e., homosexuality. Body shame might reflect the importance that gay men perceive others place on physical appearance given their greater emphasis on this characteristic when selecting a mate, believing that their partners prefer a thinner, muscular figure (Williamson & Hartley, 1998; Yelland & Tiggemann, 2003). Some researchers (e.g., Williamson & Hartley, 1998) have argued that negative experiences re-

lated to homosexuality such as stigmatization and "internalized homonegativity" (Williamson & Hartley, 1998, p. 162) may yield lower levels of self-esteem and feelings of shame. Low self-esteem and feelings of shame, including body shame, might put gay men at greater risk for disordered eating. Other researchers (e.g., Meyer, Blissett, & Oldfield, 2001) have suggested that gay (or bisexual) men are more feminine than heterosexual men, and because feminine sex role orientation may be a risk factor for disordered eating, their higher femininity may increase their risk for this behavior. It is possible that gay men's experience of body shame is associated with negative experiences of being gay and/or their sex role orientation. Future research should explore gay men's experience of body shame and their sex role orientation in relation to eating disorder symptomatology.

Weight discrepancy, with positive direct and indirect effects on eating disorder symptomatology, was a critical pathway mediating the relationships between sexual orientation, BMI and eating disorder symptomatology. The significant direct path between weight discrepancy and eating disorder symptomatology is consistent with research showing that men (and women) with greater BMI and weight discrepancy have greater risk for eating disorder symptomatology (e.g., Boisvert, 2006; Tiggemann, 1994; Tiggemann & Rothblum, 1988). In the present study, gay men in particular perceived a discrepancy between their actual and ideal weights. Heterosexual men were less likely to perceive a weight discrepancy. Past research has shown that gay men, indeed, tend to have lower BMIs *and* greater weight discrepancy than heterosexual men, with each of these variables affecting risk for disordered eating (Siever, 1994; Strong et al., 2000). Ours is the first study documenting how in gay men these factors can work at cross purposes, with lower BMIs reducing the risk for eating disorder symptomatology but greater weight discrepancy increasing it. This is the first study also finding that average weight discrepancies reported by gay men were actually *less* than those reported by heterosexual men, but the psychological effect or salience of discrepancies was shown to be *greater* for gay men. This finding supports literature (e.g., Duggan & McCreary, 2004; Pope et al., 2000) suggesting that men, particularly gay men, are increasingly being exposed to media images, and these images may affect gay men differently than heterosexual men.

BMI predicted disordered eating independently and conjointly with weight discrepancy. Men with higher BMIs had greater eating disorder symptomatology because of the direct effect of this variable, along with the indirect effect of greater weight discrepancy. As pointed out earlier, gay men were unique in reporting lower BMIs and *less average* weight discrepancy than heterosexual men, but, nevertheless, manifesting greater vulnerability to eating disorder symptomatology. The lower BMIs of gay men may be a function of dieting, being more physically fit, e.g., engaging in weight training or excessive exercise, or having a lower drive for muscularity than heterosexual men. However, gay men's lower BMIs do not translate into greater body satisfaction (Morrison et al., 2003). Gay men's lower weight discrepancy may be influenced by subcultural pressure to diet, resulting in their lower BMIs but accompanied by subcultural pressures that sustain ongoing dissatisfaction with low body weights that still fall

short of a "thin ideal" weight suggests a "no-win" situation. More research is needed to confirm this subcultural basis for gay men's lower BMIs as well as the perception that these lower weights still fall short of a "thin ideal" weight.

The fact that sexual orientation, i.e., homosexuality, is a unique, direct predictor of eating disorder symptomatology is consistent with previous research finding an association between homosexuality and eating disorder symptomatology in nonclinical samples of men (Beren et al., 1996; Herzog et al., 1991; Schneider et al., 1995; Siever, 1994; Silberstein et al., 1989; Williamson & Hartley, 1998; Yelland & Tiggemann, 2003). Consistent with previous empirical research (e.g., Williamson & Hartley, 1998; Yelland & Tiggemann, 2003), in our study gay men reported more disordered eating than their heterosexual counterparts. Their greater vulnerability to disordered eating was shown to be independent of higher BMIs or weight discrepancy; i.e., simply being gay increased level of risk. Somewhat surprising, gay men's experience of body shame was not linked to their sexual orientation, per se. However, it is possible that a relationship between body shame and sexual orientation actually exists for gay men but did not emerge due to small sample size.

Our data suggest that age has an impact on disordered eating, with younger than older gay men reporting greater eating disorder symptomatology. A post-hoc analysis of the current data found differences comparing younger (21 years or younger; "younger men") and older (22 years or older; "older men") gay and heterosexual men. The youngest group of gay men had the lowest BMIs ( $M = 21.35$ ,  $SD = 2.33$ ), compared to older gay men ( $M = 22.24$ ,  $SD = 3.39$ ), younger heterosexual men ( $M = 23.54$ ,  $SD = 2.36$ ) or older heterosexual men ( $M = 24.34$ ,  $SD = 2.80$ ). These young gay men, however, also had the greatest weight discrepancy ( $M = 5.00$ ,  $SD = 8.37$ ). All of the subgroups of men, that is, older gay men, and younger and older heterosexual men, had negative weight discrepancies, indicating that their ideal weights should be *heavier* than their actual weights. Overall, gay men tended to have a significantly lower ideal weight ( $M = 147.58$ ,  $SD = 22.50$ ) than heterosexual men ( $M = 169.89$ ,  $SD = 17.60$ ) ( $F(1, 224) = 19.05$ ,  $p < .001$ ). Looking just at men 21 years or younger, gay men had a very low ideal weight ( $M = 134.50$ ,  $SD = 17.32$ ) compared to heterosexual men of similar age ( $M = 167.30$ ,  $SD = 17.46$ ) ( $F(1, 84) = 12.22$ ,  $p < .01$ ). This was also the case with men over 21 years, with gay men having a lower ideal weight ( $M = 151.50$ ,  $SD = 23.22$ ) than heterosexual men ( $M = 171.81$ ,  $SD = 17.56$ ) ( $F(1, 136) = 11.84$ ,  $p < .001$ ). These data suggest that pressure within gay culture to maintain a fit, youthful appearance may be confined to very young gay men and may not extend to older gay men. Some researchers (e.g., Wilcox, 1997) have suggested that a "double standard of aging" (p. 549), whereby older women are judged more harshly than older men, does not apply to gay men. Given the present findings, more research is needed to determine if a "double standard of aging" actually exists among gay men.

Study findings suggest that while older gay men aspire to a relatively lower ideal weight, they did not experience the same weight discrepancy as older heterosexual men. The importance of this is that weight discrepancy is a major conduit between sexual orientation and eating disorder symptomatology. Hopefully, future research will re-

cruit larger samples of gay men, as well as investigate more fully the impact of aging on gay men and its relation to their risk for disordered eating. It could be that aging gay men have higher BMIs that, in turn, lead to greater weight discrepancy. Another possibility is that aging gay men will have lower body shame over time that counteracts weight discrepancy, thereby lowering their risk for disordered eating. Future research should focus on body shame and age in causal models of disordered eating in order to tease out nuances and pathways, thereby explaining more precisely why gay men are at higher risk for this behavior.

### *Study Limitations*

Several limitations of the present study deserve consideration. First, the study design is nonexperimental, thus causal conclusions may not be drawn. This study was cross-sectional in its design. Given the correlational nature of the study design and method of analysis, causal inferences cannot be made with certainty. For example, it is not possible to determine if higher BMI leads to greater weight discrepancy or greater weight discrepancy leads to higher BMI. Further, there exists a possibility that recursive relationships exist between the study variables. Longitudinal studies are needed to confirm the causal ordering of predictors.

Second, the study sample primarily consisted of university-aged White gay and heterosexual men. Generalizing the findings is appropriate for men with these characteristics and not others, e.g., elderly bisexual men of color. Given the heterogeneous composition of gay communities, future studies should include bisexual men, and the analysis of bisexual men should be separate from gay and heterosexual men.

Third, we utilized a nonclinical sample. It would be useful to examine the typology and severity of eating disorder symptomatology among gay men and to compare these findings with those obtained for bisexual and heterosexual men. There is a need for more research in this area with both subclinical and clinical populations to explain why gay men are more vulnerable to body image and eating problems than heterosexual men.

Fourth, the measurement of constructs used in this study might have impacted the results. The measures used to assess body shame and eating disorder symptomatology in gay and heterosexual men may not tap these constructs in the same manner as they do in women. The EDI, despite being used in several studies with men (see Morrison, Morrison et al., 2004), has been criticized for not appropriately tapping "male" forms of eating disorder symptomatology (Kaminski et al., 2005). On the other hand, a value of the measure of eating disorder symptomatology (EDI) used in the present study is that it has been widely used with many different populations, and possesses good psychometric properties of validity and reliability (Garner et al., 1983). The refinement of measures of body shame and disordered eating constructs to incorporate aspects beyond body weight and appearance is an area for further study. Also, the measuring of BMI and weight discrepancy may be limited by self-report. Research has shown that self-reported weight is accurate. People generally report their weights with surprising accu-

racy (Brownell, 1982). Where errors are made, they tend to be underestimates on the order of 2-3 pounds (Brownell, 1982). It is possible that some participants were less accurate in their self-report. They might have under- or overestimated their weight (Betz, Mintz, & Speakmon, 1994; Tiggemann, 1994).

Finally, the present study focused on selected variables within a single theoretical framework. There are other variables (e.g., ethnicity, sex role orientation, masculinity, patriarchal beliefs, self-esteem, attitudes about nutrition and exercise) that could influence the relationships examined in the present study that will need to be studied in future research.

### Conclusion

In conclusion, findings from this study and previous studies (e.g., Williamson, 1999; Williamson & Hartley, 1998; Yelland & Tiggemann, 2003) clearly indicate a need for interventions addressing body shame, weight discrepancy and eating disorder symptomatology in men, especially gay men. These interventions need to be tailored for men of different backgrounds, e.g., race/ethnicities. Prevention research offering strategies for reducing body shame, weight discrepancy and eating disorder symptomatology is needed. More research is needed to uncover gay and heterosexual men's experience of body shame and its relationship to BMI, weight discrepancy and eating disorder symptomatology in order to establish nuances based on sexual orientation or sex differences. Further research also needs to examine changes in gay and heterosexual men's body image across the lifespan, with special attention paid to body ideals for men. Further investigation of how sexual orientation is a risk factor for eating disorder symptomatology may provide important information for understanding men's body experience and health-related behaviors. Further study of sexual orientation in relation to body shame, BMI, weight discrepancy and eating disorder symptomatology can provide important information for intervention, prevention and promotion of men's health.

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