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No Harm in Looking, Right? Men's Pornography Consumption, Body Image, and Well-Being

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Many scholars have recognized and studied the links between various sources of appearance-related pressure (e.g., media and interpersonal pressures to be mesomorphic) and men's body image and well-being. Pornography is another medium of appearance-related pressure that is very rarely considered in this research. The present study incorporated pornography use into 2 models of men's body image and 1 model of men's interpersonal and emotional well-being. College men ($N = 359$) rated how often they viewed pornography and also completed measures of general media and interpersonal pressures to be mesomorphic, internalization of the mesomorphic ideal, body monitoring, body image (i.e., muscularity and body fat dissatisfaction, body appreciation), anxiety and avoidance within romantic relationships, and emotional well-being (i.e., positive and negative affect). Path analyses revealed that men's frequency of pornography use was (a) positively linked to muscularity and body fat dissatisfaction indirectly through internalization of the mesomorphic ideal, (b) negatively linked to body appreciation directly and indirectly through body monitoring, (c) positively linked to negative affect indirectly through romantic attachment anxiety and avoidance, and (d) negatively linked to positive affect indirectly through relationship attachment anxiety and avoidance. General media and interpersonal pressures to be mesomorphic also made unique contributions within the models. These findings highlight the need to more comprehensively examine men's pornography use and the implications of this use for their psychological health. Given these findings, counselors may want to examine how pornography use may be linked to their male clients' body-related, relational, and emotional well-being.

Keywords: pornography, media exposure, body image, well-being, relationship attachment

Visual media continuously disseminate images of bodies adhering to inflexible and unrealistic appearance standards, and individuals cannot escape these images due to their omnipresence (Buote, Wilson, Strahan, Gazzola, & Papps, 2011). Although the media-projected cultural appearance ideal is thin for women (i.e., ultra-thin, athletic-thin, or curvaceously thin; Harrison, 2003; Tiggemann, 2011), it is characterized by lean muscularity or being *mesomorphic* for men (i.e., a "large but not too large" muscular build coupled with low body fat; Ridgeway & Tylka, 2005, p. 213; Tiggemann, Martins, & Kirkbride, 2007). Media pair these computer-modified thin and mesomorphic appearance ideals with lifestyle symbols of happiness, desirability, and success (Tiggemann, 2011). This marketing strategy provides an illusion that individuals can and should be able to achieve these looks and lifestyles by purchasing products, exercising, and dieting, and men and women are often left feeling inadequate when these imagined scenarios do not occur (Tylka, 2011; Yamamiya, Cash, Melnyk, Posavac, & Posavac, 2005). Consequently, researchers study visual media as sources of body-related and emotional distress (Levine & Chapman, 2011).

Investigations into the connections between visual media, body image, and affect began decades ago for girls and women. Find-

ings from these studies are conclusive: Meta-analyses have revealed that viewing thin female media images increases body-related distress and depression among girls and women (Grabe, Ward, & Hyde, 2008; Groesz, Levine, & Murnen, 2002). Although studied less frequently, similar trends are found for men: They tend to feel worse about their bodies and experience increased negative affect after viewing mesomorphic male media images (Aglia & Tantleff-Dunn, 2004; Arbour & Martin Ginis, 2006; Farquhar & Wasylikiw, 2007; Hargreaves & Tiggemann, 2009; Hobza & Rochlen, 2009; Hobza, Walker, Yakushko, & Peugh, 2007; Leit, Gray, & Pope, 2002). Interestingly, the cumulative effect of media exposure on depressed affect may be especially detrimental for males: Adolescents who were not initially depressed had significantly greater odds of developing depression after 7 years if they reported heavy media exposure, with this effect being stronger for boys than girls (Primack, Swanier, Georgiopoulos, Land, & Fine, 2009). For boys and men, researchers have connected media exposure, negative body image, and emotional distress to characteristics of muscle dysmorphia, such as using anabolic steroids and other performance-enhancing substances to build muscle (Olivardia, Pope, Borowiecki, & Cohane, 2004; Smolak, Murnen, & Thompson, 2005). These findings underscore the importance of studying the intersection of media, body image, and physical and emotional well-being among males and developing clinical interventions to prevent and treat their body image disturbance (Parent, 2013a).

Media images of mesomorphic men not only inform men how they are supposed to *look* but also how they are supposed to

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be—strong, controlled, respected, able to deal with anything that comes their way, dominant, successful, and predatory (Jhally, 2009). These characteristics mirror those associated with the masculine gender role, such as being in control of emotions and women, the “winner,” violent, dominant, a “playboy,” heterosexual, and status-oriented (Mahalik et al., 2003). Thus, media present mesomorphic images of men who act out the masculine gender role, and this connection is often internalized by male viewers (McCreary, Saucier, & Courtenay, 2005).

Internalization of the masculine gender role may prompt the *centerfold syndrome* (Brooks, 1995) in men. This syndrome is composed of highly dysfunctional sexual self-schemas: voyeurism (compulsion to look at women and images of women), objectification (viewing women as sexual bodies and body parts), need for validation (affirmation of one’s masculine characteristics), trophyism (viewing attractive women as sexual conquests to be won and flaunted in front of other men), eschewal of intimacy, and engulfment (equating masculinity with independence, power, competition, and emotional detachment). The centerfold syndrome is heavily reinforced in heterosexual pornography (Brooks, 1995). With few exceptions, the pornography industry creates a fantasy world that reflects hegemonic masculinity—the male body is portrayed as a machine that functions with emotionless technical efficiency while always being in control, although women are portrayed as wanting sex, “in every possible way, and if at first they do not realize this, they can be easily persuaded because it is *in their nature*” (Garlick, 2010, p. 607). Indeed, research shows that, when primed with sexual imagery, men see a world full of masculine men, sexy women, and gender differences (Frable, Johnson, & Kellman, 1997). Masculine iconography paired with the avoidance of femininity also is a ubiquitous theme within gay male pornography (Morrison, 2004).

The centerfold syndrome was evidenced and elaborated upon in a qualitative study of adult men, all of whom viewed pornography (Elder, Brooks, & Morrow, 2012). Most participants lacked confidence in the appearance of their own bodies, especially when comparing their bodies with the bodies of male celebrities and men depicted in pornography. In Elder et al.’s (2012) figural representation of men’s responses, sexualization of women’s bodies predicted men’s discomfort with disclosure and emotional intimacy, which then predicted their body dissatisfaction and shame/negative affect. Similarly, Swami and Voracek (2013) found that the more men objectified and had both hostile and sexist attitudes toward women, the greater their drive for muscularity.

Yet, studies exploring the connections between men, pornography exposure, body image, and affect are extremely sparse. This dearth of research is surprising, given that pornography has become a media staple in many men’s lives. In fact, 87% of young adult men report that they view pornography, with 50% viewing it weekly and 20% viewing it daily or every other day (Carroll et al., 2008). Pornography use among men has increased in the last two decades due to the Internet, which provides unprecedented anonymity (it can be watched from home computers, smart phones, and wireless electronic tablets), accessibility (a vast array of pornographic Web sites available around the clock), and affordability (many pornographic Web sites are free or priced extremely low; Cooper, Delmonico, & Burg, 2000). Sex is reported as the most frequently searched topic on the Internet, with pornography

amounting to 25% of all search-engine requests (Carroll et al., 2008).

Of the few studies that have examined men’s pornography use, body image, and affect, their findings are somewhat contradictory. Despite these inconsistencies, a few tentative themes emerge. First, temporary exposure to pornographic images of women may decrease men’s body satisfaction. Such exposure increased men’s desire for a larger and muscular body (Lavine, Sweeney, & Wagner, 1999). However, this effect was not replicated in another study (Johnson, McCreary, & Mills, 2007). Second, studies have narrowly and inconsistently defined pornography use, which may account for the conflicting findings regarding the link between pornography use and men’s body dissatisfaction. It appears from this research that viewing and/or purchasing pornographic magazines may have a negligible or slightly inverse association with men’s body dissatisfaction (Duggan & McCreary, 2004; Schooler & Ward, 2006), whereas viewing Internet pornography may have a slightly positive relationship with men’s body dissatisfaction (Morrison, Ellis, Morrison, Bearden, & Harriman, 2006). Third, pornography may serve as a frame of reference for body ideals and sexual performances for men, which was evident in Elder et al.’s (2012) qualitative study. In another qualitative study, men indicated that they were not affected by the physical ideals displayed in pornography; however, the women interviewed disagreed—they believed that men were affected but unwilling to admit it (Löfgren-Mårtenson & Månsson, 2010). Gay men expressed divergent views on whether exposure to appearance standards contained in pornography affects their appearance perceptions, with many believing that pornography does not trigger a motive of emulation but simply sexual release (Morrison, 2004). Fourth, evidence is mounting that men who view pornography have increased negative affect, reporting greater depressive symptoms, anxiety, and poorer quality of life (Cooper, Boies, Maheu, & Greenfield, 1999; Johnson et al., 2007; Philaretou, Mahfouz, & Allen, 2005; Weaver et al., 2011).

The purpose of the present study was to advance this sparse and conflicting research in five ways. First, to more comprehensively assess the body image construct and its relevance to men, the present study examines the links between pornography use and three documented components of men’s body image: muscularity dissatisfaction, body fat dissatisfaction, and body appreciation. Second, it more comprehensively measures well-being by exploring positive affect alongside negative affect. Third, it positions men’s use of pornography as a specific form of media within three existing models which predict men’s body dissatisfaction (Model 1), body appreciation (Model 2), and affect (Model 3). Fourth, it examines mediators of the links between pornography use, body image, and affect. Mediators answer how or why a predictor is linked to a criterion; therefore, they account for or explain this link (Karazsia, van Dulmen, Wong, & Crowther, 2013). Perhaps the links from pornography use to body image and affect are better understood through the examined mediators, such as internalization of the mesomorphic ideal. Fifth, it does not narrowly define pornography use for men. Studies that assess only one form of pornography use (e.g., adult magazines) could result in a false negative (i.e., men viewing other forms of pornography not inquired about).

Model 1

Tripartite Influence Model

The tripartite influence model (Thompson, Coovert, & Stormer, 1999) serves as the basis for the first model. The tripartite influence model asserts that media and interpersonal (e.g., peer, family) pressures to fit culturally prescribed appearance ideals lead individuals to internalize or adopt these ideals as their own personal standard and engage in appearance comparisons with these ideals. Internalization and appearance comparisons, then, lead to body dissatisfaction. Internalization and appearance comparison are believed to account for, or mediate, the link between media and interpersonal pressures to fit culturally prescribed appearance standards and body dissatisfaction. This model has been empirically supported among adolescent boys (Smolak et al., 2005) and college men (Tylka, 2011).

Hypotheses

Specific to men, the greater they perceived pressure by the media and their family to be mesomorphic, the more likely they were to internalize the mesomorphic ideal, a construct which included engaging in appearance comparison (Tylka, 2011). Internalization of the mesomorphic ideal was found to predict men's muscularity dissatisfaction (Karazsia & Crowther, 2009, 2010; Warren, 2008) and body fat dissatisfaction (Tylka, 2011), as well as account for the links from pressures to be mesomorphic to muscularity and body fat dissatisfaction (Tylka, 2011). Also, direct paths from general media pressures to be mesomorphic to body fat dissatisfaction and interpersonal pressures to be mesomorphic to muscularity dissatisfaction were found (Tylka, 2011). Thus, these paths were hypothesized in Model 1.

Because pornography is a specific medium that spotlights the body and often utilizes actors that conform to cultural appearance ideals, pornography use can be considered a potential source of appearance-related pressure. Therefore, pornography use was included in Model 1 alongside general media and interpersonal pressures to be mesomorphic. Given that sources of appearance-related pressures are expected to work through internalization of sociocultural appearance standards to impact body image, as emphasized in the tripartite influence model (Thompson et al., 1999), pornography use was hypothesized to be related to men's muscularity and body fat dissatisfaction through internalization of the mesomorphic ideal.

Model 2

Model of Body Appreciation

A model of body appreciation (Avalos & Tylka, 2006) serves as the basis for Model 2. Body appreciation reflects an ability to hold favorable opinions of the body, accept the body despite weight/shape or perceived imperfections, respect the body by attending to its needs and engaging in healthy behaviors, and protect the body by rejecting unrealistic media images. According to this model, an environment which sends messages to individuals that their bodies are acceptable as they are leads individuals to not place as much time and focus on monitoring their appearance. Because they

perceive that their bodies are acceptable, they can turn their attention to developing other dimensions of themselves (e.g., academics, sports, hobbies, etc.). This decreased body monitoring then leads to body appreciation, as individuals see their bodies and themselves as more than their appearance. They view their bodies from an internal perspective, which encourages them to accept, appreciate, respect, and protect their bodies instead of trying to mold them to fit cultural appearance ideals.

Hypotheses

Avalos and Tylka (2006) found that decreased body monitoring (i.e., valuing body functionality over appearance) accounted for the link from sources of body *acceptance* to body appreciation. Therefore, the sources of appearance-related pressure (general media and interpersonal pressures to be mesomorphic, pornography use) were conceptualized as sources of body *nonacceptance* in Model 2, given that these sources instruct men that being mesomorphic is the ideal body type for men. Each source of nonacceptance was hypothesized to predict men's increased body monitoring, which was then expected to inversely predict body appreciation. Body monitoring was then hypothesized to be a mediator of the inverse relationship from pornography use to body appreciation.

Model 3

Model of Relational and Emotional Well-Being

Some scholars have asserted that pornography use is connected to maladaptive intimacy patterns (Philaretou et al., 2005; Popovic, 2011; Zitzman & Butler, 2009). Maladaptive intimacy patterns can be viewed through the lens of adult attachment theory (Hazan & Shaver, 1994) in the forms of *romantic attachment avoidance* (fear of intimacy and discomfort with closeness) and *romantic attachment anxiety* (fear of rejection and abandonment; Mallinckrodt & Wei, 2005). Even though attachment theory posits that attachment styles are formed in early childhood and continue throughout adulthood (Bowlby, 1979), researchers have found that the correlation between childhood and adulthood attachment is only slight to moderate in strength (Fralely, 2002; Steele, Waters, Crowell, & Treboux, 1998). This finding suggests that socialization agents other than caregivers may contribute to men's adult attachment styles (Fralely, 2002).

Specifically, scholars are beginning to consider pornography as a potential socialization agent for how men position themselves within romantic relationships (Zimbardo & Duncan, 2012; Zitzman & Butler, 2009). Pornographic scripts induce sexual arousal, climax, and resolution without relationship attentiveness or commitment. Often, these scripts "dwell on sexual engagement of parties who have just met, who are in no way attached or committed to one another, and who will part shortly, never to meet again" (Zillman & Bryant, 1988, p. 521).

Hypotheses

By consistently legitimizing and encouraging sex and relationships without intimacy, pornography use may promote romantic attachment avoidance. By characterizing sexual encounters as

fleeting and relationships as noncommittal, pornography could encourage viewers to worry about their partners leaving the relationship, which is representative of romantic attachment anxiety. Thus, in Model 3, pornography use was hypothesized to predict romantic attachment avoidance and romantic attachment anxiety. To ensure that these links contributed unique variance to the model beyond other sources of appearance-related pressure, general media and interpersonal pressures to be mesomorphic were also hypothesized to be predictors of romantic attachment anxiety and avoidance.

Romantic attachment anxiety and avoidance have been linked to decreased psychological well-being in college students (Mallinckrodt & Wei, 2005; Wei, Mallinckrodt, Russell, & Abraham, 2004). Decreased psychological well-being often manifests as low levels of positive affect accompanied by high levels of negative affect, which are distinct constructs (Watson & Clark, 1994). In Model 3, romantic attachment anxiety and avoidance each were hypothesized to inversely predict positive affect and positively predict negative affect. Pornography use also was hypothesized to be inversely linked to positive affect and positively linked to negative affect through attachment anxiety and avoidance; that is, the more men view pornography, the more they would internalize maladaptive relationship attachment styles, which would then explain their decreased well-being.

Method

Participants

The data set included 359 male undergraduate students enrolled at a regional campus of a large Midwestern university. They ranged in age from 18 to 47 ($M = 20.49$, $SD = 4.72$) and identified as White (82.2%), African American (5.6%), Asian American (4.5%), Latino (0.8%), multiracial (3.6%), or other (3.3%). Most were first-year students (79.4%), followed by sophomores (14.2%), juniors (4.5%), or seniors (1.9%). They self-identified as heterosexual (96.7%), gay (2.2%), or bisexual (1.1%) and reported their current relationship status as single (60.4%), involved in a long-term relationship (32.3%), engaged (2.2%), married (4.2%), or divorced (0.8%).

Measures

Pornography use. A single-item indicator assessed the degree to which participants viewed pornography: "I view pornography (Internet pornographic sites, magazines, DVDs, videos, etc.)." The response scale accompanying this item was: *never* (scored as 1), *rarely* (2), *sometimes* (3), *often* (4), *usually* (5), and *always* (also 5).¹ An additional response option was provided (i.e., *This question is too sensitive for me to answer*). Although multiple-item measures are preferred because they reduce the potential for random error variance, researchers support the use of single-item measures when the construct being assessed is concrete (Bergkvist & Rossiter, 2007), unambiguous (Sackett & Larson, 1990), and meant for an adult population (Robins, Hendin, & Trzesniewski, 2001), which is the case for pornography use.

Pressures to be mesomorphic. The 8-item Perceived Sociocultural Pressures Scale (PSPS; Stice, Ziemba, Margolis, & Flick, 1996) estimated men's perceived pressure to be mesomorphic

from general media (two items) and three interpersonal sources: friends (two items), family (two items), and dating partners (two items). The original PSPS has participants estimate the extent they experience pressure to lose weight and notice strong messages to have a thin body from these sources. In order to reflect gendered body ideals for men, PSPS items were altered by replacing "lose weight" with "to be more muscular and/or lean," and "have a thin body" with "have a muscular and/or lean body" (e.g., "I've felt pressure from my friends to be more muscular and/or lean"). A similar modified version was administered to a sample of college men, and its scores were internally consistent ($\alpha = .86$) and related to internalization of the mesomorphic ideal ($r = .39$), demonstrating evidence of internal consistency reliability and construct validity (Tylka, Bergeron, & Schwartz, 2005). Item responses ranged from 1 (*never*) to 5 (*always*). To create subscale scores for general media and interpersonal pressure to be mesomorphic, the two general media items were averaged and the six interpersonal items were averaged.

Internalization of the mesomorphic ideal. The 11-item Internalization subscale of the men's version of the Sociocultural Attitudes Toward Appearance Questionnaire-Revised (SATAQ-I-R; Heinberg, Thompson, & Stormer, 1995) measures the extent to which men have adopted the mesomorphic body ideal as their own personal standard and engage in appearance comparison. Item responses (e.g., "Photographs of physically fit men make me wish that I had better muscle tone," "I often find myself comparing my physique with that of athletes pictured in magazines") are rated along a 5-point scale ranging from 1 (*completely disagree*) to 5 (*completely agree*) and averaged. Higher scores reflect greater internalization. Among college men, this subscale was found to yield internally consistent scores ($\alpha = .91$) and was strongly related to men's dissatisfaction with their muscularity ($r = .56$) and body fat ($r = .47$; Tylka, 2011).

Body dissatisfaction. The 10-item Muscularity Dissatisfaction (MD) and 8-item Body Fat Dissatisfaction (BFD) subscales of the Male Body Attitudes Scale (MBAS; Tylka et al., 2005) were administered. MD items (e.g., "I think I have too little muscle on my body") and BFD items (e.g., "I think my body should be leaner") are rated along a scale ranging from 1 (*never*) to 6 (*always*). Item responses are averaged; higher scores reflect greater dissatisfaction. Estimates have upheld the MBAS's factor structure, internal consistency reliability ($\alpha_s = .90$ for MD, $.93$ for BFD), 2-week stability ($r_s = .88$ for MD, $.94$ for BFD), and construct validity ($r = .82$ between MD and drive for muscularity, $r = -.67$ between BFD and physical condition body esteem) among college men (Tylka et al., 2005).

Body monitoring. The 8-item Body Surveillance subscale of the Objectified Body Consciousness Scale (OBCS; McKinley & Hyde, 1996) was used. Its items (e.g., "I often worry about whether the clothes I am wearing make me look good") are rated along a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Item responses are averaged, and higher scores reflect greater body monitoring. Among men, Body Surveillance demon-

¹ It was realized after data were collected that it is impossible for men to literally *always* view pornography. Therefore, *always* was assigned the same numerical value as *usually*, given that *usually* is the highest frequency response that could be possible.

strated internally consistent scores ($\alpha = .83$) and construct validity via its relationship to drive for muscularity ($r = .49$; Martins, Tiggemann, & Kirkbride, 2007).

Body appreciation. The 13-item Body Appreciation Scale (BAS; Avalos, Tylka, & Wood-Barcalow, 2005) assesses acceptance of, favorable opinions toward, and respect for the body. Its items (e.g., "I feel good about my body") are rated along a scale from 1 (*never*) to 5 (*always*). Item responses are averaged, and higher scores indicate greater body appreciation. Among college men, its scores are internally consistent ($\alpha = .92$) and inversely related to dissatisfaction with muscularity ($r = -.38$) and body fat ($r = -.64$; Tylka, 2013).

Romantic attachment anxiety and avoidance. The Experiences in Close Relationships Scale (ECRS; Brennan, Clark, & Shaver, 1998) assesses romantic attachment anxiety (18-item Anxiety subscale, e.g., "I need a lot of reassurance that I am loved by my partner") and avoidance (18-item Avoidance subscale, e.g., "I am nervous when partners get too close to me"). Items are rated on a scale ranging from 1 (*disagree strongly*) to 7 (*agree strongly*) and averaged; higher scores reflect greater romantic attachment anxiety and avoidance. Among college students, its scores have demonstrated evidence of internal consistency reliability ($\alpha = .92$ and $.94$; Mallinckrodt & Wei, 2005), 6-month stability ($r = .68$ and $.71$; Lopez & Gormley, 2002), and construct validity via inverse relationships to social support ($r = -.35$ and $-.44$; Mallinckrodt & Wei, 2005) for the Anxiety and Avoidance subscales, respectively.

Positive and negative affect. The Positive and Negative Affect Schedule-Expanded (PANAS-X; Watson & Clark, 1994; Watson, Clark, & Tellegen, 1988) contains two 10-item subscales: positive affect (PA; e.g., "enthusiastic," "determined") and negative affect (NA; e.g., "irritable," "upset"). Participants rated the degree they experienced each emotion in general along a scale ranging from 1 (*very slightly or not at all*) to 5 (*extremely*). Item responses are averaged, with higher subscale levels corresponding to greater PA and NA. Among college students, subscale scores were found to be internally consistent ($\alpha = .87$ for PA, $.85$ for NA), be stable over a 2-month period ($r = .70$ for PA, $.71$ for NA; Watson & Clark, 1994), and demonstrate construct validity via correlations with depressive symptoms ($r = -.36$ for PA, $.58$ for NA; Watson et al., 1988).

Procedure

After receiving IRB approval, this study was posted alongside other studies on the psychology department's research management Web site. On the Web site invitation, men were told, "This study explores relationship variables, body-related attitudes and behaviors, and well-being among men." No mention of pornography was made. Interested students clicked a link to a Web page that hosted the informed consent sheet. After providing consent, they were directed to the survey Web page, completed the survey, and were awarded class credit. Measures were counterbalanced to control for order effects.

Of the 424 participants who began the survey, 21 participants were deleted for failing at least one of the three embedded validity questions (e.g., "To make sure you are paying attention, please answer 'never' for this item"), 20 who exited the survey before completion, 16 for significant missing data (not completing at least

80% of each measure), five because they reported being female, and three who endorsed "This question is too sensitive for me to answer") in response to the item querying about their pornography use. This screening reduced the data set to 359 participants whose responses were analyzed.

Results

Preliminary Analyses

Twenty-three (6.41%) participants had at least one missing data point. The count for item-level missingness ranged from 0% to 3.8% ($M = 0.55\%$), which is considered low (Parent, 2013b). Item-level data points were missing completely at random, $\chi^2(6889, N = 359) = 7029.21, p = .117$. Available item analysis was used, which is recommended under these conditions (see Parent, 2013b).

Pornography use and mean scale/subscale scores were examined for multivariate normality. The largest absolute value for skewness (0.73) and the largest absolute value for kurtosis (0.82) were well below the absolute values that pose problems in regression and structural analyses (i.e., skewness > 3.00 and/or kurtosis > 10.00 ; Kline, 2010); thus, no variable was transformed.

When reporting on the frequency of their pornography use, 17.8% indicated *never*, 27.6% *rarely*, 32.9% *sometimes*, 13.6% *often*, 4.5% *usually*, and 3.6% *always* (*usually* and *always* responses were combined in the analyses), with the average response falling closest to *sometimes*. Table 1 presents the variable means, standard deviations, alphas, and intercorrelations. Pornography use was slightly-to-moderately related to all study variables according to Cohen's (1992) criteria.

Tests of the Hypothesized Models

All models were evaluated using path analysis procedures contained in Mplus Version 6.12 (Muthén & Muthén, 1998–2011). For each model, pornography use was entered as a single-item measured indicator, and mean scale/subscale scores served as measured indicators for other variables. The sample size exceeded the recommended minimum 5:1 participants-to-parameter ratio needed to confidently examine a model (Bentler, 1990); under this criterion, each model could include up to 72 parameters. Figure 1 included 11 parameters, Figure 2 included nine, and Figure 3 included 17.

For each model, adequacy of fit was determined using consensus among three indices: the Comparative Fit Index (CFI), standardized root-mean square residual (SRMR), and root mean square error of approximation (RMSEA). CFI values around .95 and higher, SRMR values around .08 and lower, and RMSEA values around .06 and lower indicate a relatively good fit of the model to the data, whereas CFI values of .90–.94, SRMR values of .09–.10, and RMSEA values of .07–.10 indicate an acceptable fit (Hu & Bentler, 1999). Values outside of these ranges reveal poor fit. Although nonsignificant χ^2 values indicate that the model provides a good fit to the data, CFI, SRMR, and RMSEA values better estimate model fit because the χ^2 value is often significant with large sample sizes (Kline, 2010). It was decided a priori to (a) integrate paths not originally estimated but data strongly suggest should be estimated (i.e., modification indices [MI] larger than

Table 1
Variable Means, Standard Deviations, and Correlations

Variable	M	SD	Range	1	2	3	4	5	6	7	8	9	10	11	12
1. Pornography use	2.67	1.16	1-5	n/a											
2. Media pressure	2.99	1.21	1-5	.07	.86										
3. Interpersonal pressure	2.13	0.82	1-5	.13	.42*	.90									
4. Internalization	3.07	0.88	1-5	.17*	.56*	.34*	.91								
5. Muscle dissatisfaction	3.24	1.11	1-6	.16*	.35*	.35*	.48*	.93							
6. Body fat dissatisfaction	2.95	1.26	1-6	.16*	.26*	.21*	.46*	.30*	.94						
7. Body monitoring	4.02	1.29	1-7	.25*	.27*	.25*	.64*	.37*	.39*	.88					
8. Body appreciation	3.84	0.70	1-5	-.22*	-.32*	-.26*	-.50*	-.36*	-.63*	-.50*	.92				
9. Attachment anxiety	3.79	1.20	1-7	.28*	.22*	.28*	.34*	.27*	.19*	.37*	-.31*	.93			
10. Attachment avoidance	2.98	1.19	1-7	.21*	.15*	.23*	.28*	.22	.22*	.20*	-.35*	.20*	.95		
11. Positive affect	3.71	0.59	1-5	-.19*	-.11	-.09	-.26*	-.25*	-.25*	-.23*	.52*	-.26*	-.32*	.85	
12. Negative affect	2.11	0.59	1-5	.23*	.20*	.30*	.39*	.33*	.22*	.34*	-.40*	.48*	.35*	-.26*	.84

Note. N = 359. Alphas are presented along the diagonal.

* $p < .01$.

5.0) and (b) trim nonsignificant paths in order to achieve the most accurate and parsimonious model.

To examine mediation, Shrout and Bolger's (2002) bootstrap procedures were used to estimate the significance of the indirect effects. Mplus was specified to create 10,000 bootstrap samples from the data set by random sampling with replacement and generate indirect effects and bias-corrected confidence intervals (CIs) around the indirect effects. Indirect effects (β s) are significant if the 95% CIs do not include zero. Full or partial mediation was determined by exploring whether the direct paths between pornography use and the criteria were significant once the mediator was included (if significant = partial mediation, if not significant = full mediation).

Model 1. Model 1 provided an excellent fit to the data, CFI = .989, SRMR = .024, RMSEA = .051 (90% CI [.000, .104]), $\chi^2(4, N = 359) = 7.68, p = .104$. All hypothesized paths were significant, with one exception: general media pressure to be mesomorphic did not uniquely predict body fat dissatisfaction. Deleting this path did not provide a worse fit, $\chi^2(5, N = 359) = 7.69, p = .174$; CFI = .992, SRMR = .024, RMSEA = .039 (90% CI [.000, .090]), $\Delta\chi^2(1) = 0.01, p = .920$. Thus, this trimmed Model 1 was retained for parsimony. Standardized path coefficients and the

percentage of variance accounted for in each criterion variable are included in Figure 1.

Next, internalization of the mesomorphic ideal was examined as a mediator between (a) pornography use and muscularity dissatisfaction and (b) pornography use and body fat dissatisfaction. Both indirect effects were significant, indicating that internalization of the mesomorphic ideal mediated the links from pornography use to muscularity dissatisfaction ($\beta = .047, p = .016$; 95% CI [.009, .075]) and body fat dissatisfaction ($\beta = .054, p = .017$; 95% CI [.012, .108]). Full mediation was evidenced, as direct paths from pornography use to muscularity dissatisfaction ($\beta = .061, p = .175$) and body fat dissatisfaction ($\beta = .098, p = .051$) were not significant.

Model 2. Model 2 provided a poor-to-acceptable fit to the data, CFI = .980, SRMR = .021, RMSEA = .100 (90% CI [.024, .200]), $\chi^2(1, N = 359) = 4.61, p = .032$. All hypothesized paths were significant except one: the path from interpersonal pressure to be mesomorphic to body appreciation was not significant, and thus was trimmed from the model. The trimmed model was not significantly different from the original model, $\chi^2(2, N = 359) = 7.32, p = .026$; CFI = .970, SRMR = .026, RMSEA = .086 (90% CI [.026, .157]), $\Delta\chi^2(1) = 2.71, p =$

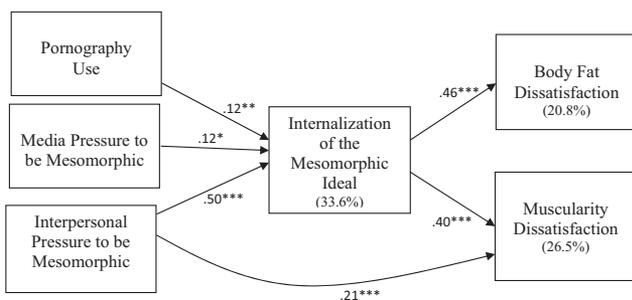


Figure 1. Pornography use integrated within a social influence model of men's body dissatisfaction (Model 1). Standardized path coefficients are presented, and the percentage of variance accounted for by the predictors is included below the criterion variable names. * $p < .05$. ** $p < .01$. *** $p < .001$.

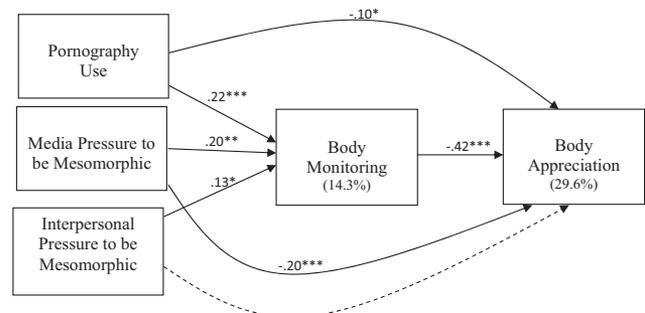


Figure 2. Pornography use integrated within a social influence model of men's body appreciation (Model 2). Standardized path coefficients are presented, and the percentage of variance accounted for by the predictors is included below the criterion variable names. * $p < .05$. ** $p < .01$. *** $p < .001$.

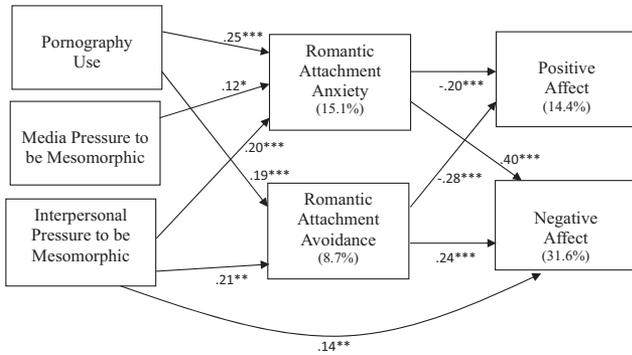


Figure 3. Pornography use integrated within a relational model of men's positive and negative affect (Model 3). Standardized path coefficients are presented, and the percentage of variance accounted for by the predictors is included below the criterion variable names. * $p < .05$. ** $p < .01$. *** $p < .001$.

.100. However, a large MI (5.52) indicated that a path should be added from pornography use to body appreciation. Adding this path significantly improved model fit, $\chi^2(1, N = 359) = 2.23$, $p = .135$; CFI = .993, SRMR = .013, RMSEA = .059 (90% CI [.000, .166]), $\Delta\chi^2(1) = 5.09$, $p = .024$, justifying its presence in the model. Standardized path coefficients, as well as the percentage of variance accounted for in each criterion variable, are included in Figure 2.

Body monitoring was then examined as a mediator between pornography use and body appreciation. The indirect effect was significant, indicating that body monitoring partially mediated this association ($\beta = -.092$, $p < .001$; 95% CI [-.136, -.048]), given that pornography use directly predicted body appreciation ($\beta = -.104$, $p = .020$).

Model 3. Model 3 provided a good fit to the data, CFI = .973, SRMR = .028, RMSEA = .060 (90% CI [.015, .102]), $\chi^2(6, N = 359) = 13.64$, $p = .034$. All hypothesized paths were significant except for one: general media pressure to be mesomorphic did not uniquely predict romantic attachment avoidance. This path was subsequently trimmed. Deleting this path did not provide a worse fit, $\chi^2(7, N = 359) = 14.96$, $p = .037$; CFI = .971, SRMR = .031, RMSEA = .056 (90% CI [.013, .096]), $\Delta\chi^2(1) = 1.32$, $p = .251$. One MI exceeded 5.0, revealing that a path from interpersonal pressure to be mesomorphic to negative affect should be estimated. Adding this path improved model fit, $\chi^2(6, N = 359) = 6.37$, $p = .383$; CFI = .999, SRMR = .020, RMSEA = .013 (90% CI [.000, .071]), $\Delta\chi^2(1) = 8.59$, $p = .003$. Standardized path coefficients and the percentage of variance accounted for in each criterion variable are included in Figure 3.

Both indirect effects were significant when romantic attachment anxiety was examined as a mediator between pornography use and positive affect ($\beta = -.051$, $p = .005$; 95% CI [-.085, -.016]) and pornography use and negative affect ($\beta = .100$, $p < .001$; CI [.054, .145]). Likewise, both indirect effects were significant when romantic attachment avoidance was examined as a mediator between pornography use and positive affect ($\beta = -.053$, $p = .006$; 95% CI [-.091, -.015]) and pornography use and negative affect ($\beta = .044$, $p = .009$; 95% CI [.011, .077]). Full mediation was evidenced given that direct paths from pornography use to positive

affect ($\beta = -.081$, $p = .076$) and negative affect ($\beta = .051$, $p = .284$) were not significant.

Discussion

As a specific form of media, pornography has the potential to contribute to male viewers' body-related attitudes and well-being, given its presentation of sexualized images of men who, more often than not, conform to cultural appearance ideals and align with or cater to the masculine gender role (Garlick, 2010). Men, on average, have been found to be regular users of pornography (Carroll et al., 2008). Thus, it is important to understand associations between men's pornography use, body image, and affect. Acknowledging the sparse research in this area, the present study integrated pornography use within three models of men's (a) muscularity and body fat dissatisfaction, (b) body appreciation, and (c) negative and positive affect. Overall, findings revealed that pornography use can be meaningfully integrated within each model because it accounted for unique variance in model constructs, even when general media and interpersonal pressures to be mesomorphic were considered.

In the first model, pornography use was positively linked to men's internalization of the mesomorphic ideal. Although this association was rather small, it upholds facets of the centerfold syndrome as reported by Brooks (1995)—this syndrome emphasizes pornography's role in organizing and promulgating masculine characteristics, including a masculinized mesomorphic appearance, and male viewers' internalization of these characteristics. Internalization of the mesomorphic ideal, then, appears to connect pornography use to men's muscularity and body fat dissatisfaction. This finding expands on earlier qualitative findings that men reported decreased confidence when comparing their bodies with men in pornography (Elder et al., 2012), which is a manifestation of internalization of the mesomorphic ideal. Further, the present study's findings both support and expand upon the tripartite influence model (Thompson et al., 1999) by showing that pornography may be an important source of appearance-related pressure that, in addition to general media and interpersonal pressures to be mesomorphic, is indirectly associated with men's body dissatisfaction through internalization of the mesomorphic ideal.

Findings from the second model revealed that men's pornography use is connected to another dimension of body image: body appreciation. Specifically, pornography use was inversely linked to body appreciation, both directly and indirectly through habitual body monitoring. This pattern of relationships indicates that men who view pornography are more likely to focus on how they look rather than what their body can do for them, and less likely to challenge cultural appearance ideals and engage in self-care behaviors for their body. Therefore, pornography use may be associated with men being more open to engaging in deleterious body change strategies (e.g., fasting, cutting out certain food groups, anabolic steroid use, excessive bodybuilding, cosmetic surgery) to achieve the mesomorphic ideal rather than adaptive self-care strategies (e.g., moderate cardiovascular exercise and strength training, choosing nutritious foods) that emphasize the health and functioning of their body. Although Duggan and McCreary (2004) did not find associations between pornography use, drive for muscularity, and eating disorder symptomatology in gay or heterosexual men,

they confined pornography use to pornographic magazines, which misses men who regularly view other forms (e.g., Internet pornography). Indeed, the narrower a construct is defined, the less explanation it offers (Wood, 2007).

Extending beyond body image, the present study revealed that men's pornography use was positively associated with romantic attachment avoidance and anxiety. Theoretical assertions (Brooks, 1995; Hazan & Shaver, 1994) as well as preliminary findings from qualitative research (Bergner & Bridges, 2002; Elder et al., 2012; Philaretou et al., 2005; Zitzman & Butler, 2009) suggest that pornography scripts present gender-typed and sexualized working models of self and others, which could shape how men position themselves within their actual romantic relationships. As a socialization agent, pornography use may be linked to men's (a) romantic attachment avoidance by legitimizing and encouraging sex without intimacy and (b) romantic attachment anxiety by heightening anxiety surrounding partner commitment. That is, by showing fleeting sexual encounters and noncommittal relationships, pornography may validate men's fears that their real-life partners will cheat on, reject, and/or abandon them.

Much research has found that romantic attachment avoidance and anxiety are linked to men's decreased well-being (e.g., Mallinckrodt & Wei, 2005; Wei, Mallinckrodt, Russell, & Abraham, 2004). The present study builds on this research by uncovering that romantic attachment avoidance and anxiety fully accounted for the associations between pornography use and men's affect. This finding highlights (a) that pornography may be a socialization agent for how men carry out their romantic relationships and (b) dysfunctional relationship patterns are associated with men's negative well-being. More specifically, pornography use is positively associated with distress and negatively associated with positive affect because of romantic attachment difficulties. Given that positive affect, in particular, helps build social support networks, process emotional information accurately, perceive life satisfaction, experience increased attention and creativity, and overcome distressing situations (Fredrickson, 2004), men who have lower levels of positive affect may be compromised in a myriad of ways, including building and maintaining support networks, physical health, psychological health, and performance at work.

Implications for Clinical Practice and Prevention

The present study's findings provide guidance for professionals in clinical and prevention settings. First, clinicians working with young adult men with body image, relational, and affective concerns may want to inquire about pornography use. Clinicians can then explore how their male clients' use of pornographic material may be connected to their internalized beliefs about appearance and relationship styles, which may be directly linked to their presenting concerns or symptoms (e.g., depression, anxiety, languishing or low levels of positive affect, diminished well-being, body dissatisfaction, relationship difficulties, and lowered body appreciation).

Men who regularly view pornography may have internalized scripts about how they should act, and how women should act, within sexual relationships. In fact, pornography is often designed to have women express sexual excitement about being objectified (Bergner & Bridges, 2002). Heterosexual men who view pornog-

raphy, then, are exposed to this objectifying treatment, which may then shape how they treat their female partners. Given that 66.5% of men consider pornography to be an acceptable way to express their sexuality and their pornography use typically begins when they are in early adolescence (Carroll et al., 2008), it may serve as their primary sex education tool. Therefore, it is important that clinicians help their male clients understand that the normalized behavior toward women in pornography is indeed objectifying, which is negatively related to women's body image and well-being (Tiggemann, 2011) as well as men's body image and well-being (Swami & Voracek, 2013). Developing prevention programs that illustrate healthy (secure) and dysfunctional (insecure) relationship attachment styles may help prevent boys and men from internalizing the relational styles portrayed in pornography.

Although the pattern of findings in the present study clearly suggests that pornography is related to men's body image and well-being in a detrimental manner, men may not view pornography as capable of having these associations. In Morrison's (2004) qualitative study, men argued that pornography did not influence their body image—they viewed pornography solely as a masturbatory aid. They believed that, unlike other media, pornography does not use tactics that promote body dissatisfaction in order to facilitate consumerism. Therefore, these men were aware of the potential effects of other media (e.g., advertising) on body image; however, they denied that pornography could be associated with their attitudes toward their bodies. Perhaps media literacy programs could be designed to help boys and men deconstruct images and interpret messages found in pornography. For instance, these programs could point out that consumerism is indeed an aspect of pornography, as mesomorphic male bodies and thin female bodies are often paired with products (e.g., a pornographic DVD, penis enhancement products) or services (e.g., adult dating sites) in order for companies to sell their products and services. Also, media literacy programs could pinpoint how pornography enacts hegemonic masculinity and how this enactment is detrimental for men's relational and emotional well-being (e.g., portraying relationships as void of intimacy, random sexual encounters, women as objects).

It should be noted that general media pressures to be mesomorphic were uniquely associated with internalization of the mesomorphic ideal, body monitoring, body appreciation, and romantic attachment anxiety. Interpersonal pressures to be mesomorphic also were uniquely linked to internalization of the mesomorphic ideal, muscularity dissatisfaction, body monitoring, romantic attachment anxiety and avoidance, and negative affect. Although most of these links were rather small in magnitude, these patterns suggest that these two sources of sociocultural influence are also deserving of empirical and clinical attention among men.

Limitations and Future Research

First, the response scale used to estimate men's pornography consumption was subjective and thus may have misrepresented how frequently men view pornography. For example, some men who endorsed "sometimes" may view pornography once a week, whereas others who endorsed "sometimes" may only view pornography once a month. Also, the response scale included an impossible response anchor (i.e., *always*), making it necessary to classify men who reported *always* into the next highest, but more

realistic response option (i.e., *usually*). For these reasons, it is recommended that researchers use a more objective response scale in future investigations of associations between men's pornography use and well-being, such as one that has men report the number of hours per week or month they view pornography. Additionally, men may not have provided accurate reports of their pornography use due to demand characteristics, although the assured anonymity of their responses may have decreased the likelihood of socially desirable responding.

Second, the types of pornographic material that men used were not assessed. It is possible that men's levels of psychological, body-related, and relational well-being may differ based on whether the pornography they view typically consists of actors/models that conform to cultural appearance standards or more realistic bodies as seen in amateur pornography. The type of sexual activity demonstrated in the material (e.g., between men, between women, or between men and women) may also differentially relate to men's body image and well-being. Researchers also could determine whether pornography use is associated with other body-related variables. For instance, men who view pornography may be more motivated to seek cosmetic surgery and engage in other harmful body change behaviors and more reluctant to engage in adaptive self-care strategies.

Third, although the present study incorporated a measure of internalization of the mesomorphic ideal that has shown to produce reliable and valid estimates with college men (Tylka, 2011), a newer version exists: the Internalization-General subscale of the Sociocultural Attitudes Toward Appearance Questionnaire-3 (Thompson, van den Berg, Roehrig, Guarda, & Heinberg, 2004). Researchers may want to consider using this more recent version, and/or the Internalization-Athlete subscale of the SATAQ-3, as a measure of men's internalization of the mesomorphic ideal.

Fourth, the current sample was relatively homogenous, as it was comprised of mostly White, nonmarried, heterosexual young adult men, all of whom were college students from the same geographic region. Thus, the results from the current sample may not generalize well to more diverse samples. Researchers could explore associations between men's pornography use and their body image and well-being among diverse groups of men, acknowledging that the intersection of their social identity statuses may alter their experiences and distress.

Last, given that the present study collected data from one time point, directionality of the model variables cannot be argued or determined. Alternative arrangements of the model variables may better fit the experiences of men. For instance, it could be that men who have romantic attachment avoidance turn to pornography for sexual release, as pornography may be viewed as less "messy" than a sexually intimate relationship with a real-life partner. Hence, longitudinal research designs examining the directionality and strength of these associations over time are important to conduct before more definitive conclusions are made. Nevertheless, the present study's preliminary results indicate that future investigations of pornography use and men's body-related, psychological, and relational well-being are important to conduct.

Conclusions

Given its accessibility, affordability, and anonymity (Ropelato, 2007), pornography is regularly viewed by men. The images and

messages within pornography, rooted in masculine gender role ideology, could shape men's body-related, relational, and psychological well-being. The present study is one of the first to explore links between pornography use, body image, and well-being among men in a quantitative manner, and it is the first study that grounds pornography use within existing models of men's body image and well-being. Men's pornography use was found to be indirectly linked to their muscularity and body fat dissatisfaction through internalization of the mesomorphic ideal, directly and indirectly related to lower body appreciation through body monitoring, and indirectly associated with lower positive affect and higher negative affect through relationship attachment anxiety and avoidance. These preliminary results indicate that pornography use is negatively connected to young adult men's well-being in multiple areas. Researchers are urged to further develop this area of inquiry to better understand the degree and extent of how pornography use predicts men's well-being in additional contexts (e.g., family, work, and health) using correlational and longitudinal designs.

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