A Dissertation

Submitted to the Faculty

of

Xavier University

in Partial Fulfillment of the

Requirements for the Degree of

Doctor of Psychology

by

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January 12, 2012

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Size Matters: Television Media Effects on Male Body Image

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Acknowledgements

"This too shall pass."

This proverb quickly became my motto while writing this dissertation. I would like to take the opportunity to thank all the people who believed in and supported me throughout this adventure so-called graduate school.

Xavier University Psychology Department Faculty: Thank you for your trusty mathematical formula that helped me gain acceptance into the doctorate program. I am thankful for this experience and have learned a great deal from each of you. Dr. Nicholas Salsman has been an outstanding advisor. I thank you for your countless hours of work - at all times of the year - including over summer and holiday breaks - and into the wee hours of the night. I am grateful for my committee members, Dr. Christine Dacey and Dr. Janet Schultz. Your knowledge, wisdom, and expertise were essential in the development of this project.

Friends & Family: I have met some of my best friends at Xavier. I owe special thanks to Megan Schuster and Rena Hill for our memorable girl-nights – even those when we were all so irritable we just grumbled through dinner. I thank my husband, Jason B. Garrison, for his endless support and quiet patience. Your tolerance of my intermittent foul mood is a testament in itself of your unconditional love. Even though at times I found your incessant optimism to be maddening, your words of encouragement and goofy humor were always just what the doctor ordered. Finally, and most importantly, I dedicate this book to my adoring parents, Dale and Sandy Collins. Your love and faith in me has been the seed of my ambition and your support, in all forms, has helped my dreams come to fruition. And after 1,603 days of endless writing and revising - *It passed!*

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Review of the Literature

There has been a change in the way society and the media portray the male body that corresponds with the increased male drive to achieve the muscular ideal body. These changes in the media have prompted researchers to examine the impact the media plays on male body image. Research on male body image has become more popular in the last decade and a number of unanswered questions have emerged.

Recently, research has demonstrated a heightened awareness concerning the negative effects of exposure to the ideal male in the media on men's psychological health (Agliata & Tantleff-Dunn, 2004; Hatoum & Belle, 2004; Humphreys & Paxton, 2004; Tiggemann, 2003). One of the first studies on male body image found that 95% of college-age men expressed dissatisfaction with some part of their bodies and 70% experienced a discrepancy between their current and ideal body shapes (Mishkind, Rodin, Silberstein, & Striegel-Moore, 1986). This dissatisfaction currently appears to be pervasive among the undergraduate male population with as many as 90% of students reporting a desire to be more muscular (Frederick et al., 2007). The relationship between perceptions of media messages and male body image concerns has received little attention and the proposed study will add to this research.

There are several limitations in the current research on male body image. First, there is not a media exposure measure in any field of research that effectively gathers information on both the amount of exposure as well as the type of exposure. Second, the few studies that have looked at mediators of media exposure and body image have only

used simple mediation analysis methods that cannot account for indirect effects. The proposed study will address these issues.

Body Dissatisfaction

Body dissatisfaction occurs when an individual does not like his or her physical appearance and desires to change some aspect of the body. Body dissatisfaction can be both positive and negative and may motivate individuals to engage in healthy or unhealthy behaviors. Individuals dissatisfied with one's body occasionally resort to unhealthy body change behaviors to "improve" his or her looks, which may include taking steroids, laxatives, excessive exercising, or even developing an eating disorder. Body dissatisfaction is important in the present study because it is hypothesized that the more exposure men have to media portraying the ideal male, the more dissatisfied they will be with their own bodies.

Body dissatisfaction has been defined as significant disparity between one's ideal body type and one's actual body type and has been associated with depression, social anxiety, and low self-esteem (Cash, 1990; Frederick & Morrison, 1996; Thompson, 1992). Along the same lines, body dissatisfaction is a precursor to dieting and often precipitates disordered eating habits among both men and women (Twamley & Davis, 1999). These unhealthy body change behaviors may also include the use of steroids, beta-receptor agonists, and rigidly structured diets (Pope, Phillips, & Olivardia, 2000). Anabolic-androgenic steroids have been known to cause depressed levels of high-density lipoproteins, elevated levels of low-density lipoproteins, manic symptoms/episodes, increased aggression, addiction, and even occasional homicidal tendencies (Pope et al.).

With these known clinical implications, it is important to study what causes problematic body dissatisfaction.

Some individuals experience positive benefits from body dissatisfaction. Body dissatisfaction has been linked to healthy behavioral changes such as exercise and weight loss. Lu and Hou (2009) conducted a cross-sectional study in Taiwan, testing a model of predictors and consequences of body dissatisfaction with 233 female college students. The researchers found that body dissatisfaction increased with BMI, perceptions of how others viewed their bodies, and upward social comparisons. Analyses also revealed that body dissatisfaction significantly influenced participant weight-loss intentions suggesting that dissatisfaction with the body may actually lead to increased protective health behaviors (Lu & Hou).

Body Image Measurement

Body image is considered to be, and is measured as, a multi-dimensional construct. There are four main dimensions of body image: perceptual, cognitive/rational, affective/emotional, and behavioral (Brown, Cash, & Mikulka, 1990; Cash, 1990; Cash, 1994; Cash & Green, 1986). Various assessment instruments exist that measure the different body image dimensions. Each measure captures some part of an individual's perceptual, cognitive, affective, or behavioral functioning related to these factors. For example, a perceptual measure captures how an individual imagines himself to look whereas a cognitive measure gathers how he thinks about his body. An affective measure captures how an individual feels about his body whereas a behavior measure looks at what actions he performs which reflect his perceptions, thoughts, and feelings about his body.

In female body image literature, differential findings have resulted from using cognitive verses affective measures. Thompson and Dolce (1989) examined the relationship between multiple measures of body image by assessing perceived, actual, and ideal body sizes in 32 female undergraduates. First, the researchers assessed participant's actual height and weight and gave them a handout that explained the difference between an emotional and a rational belief. Next, participants entered a semi-dark room where they used a self-adjustable light beam procedure to estimate the widths of three body sites: waist, hips, and thighs. The researchers gave participants two sets of instructions: to rate based on how they "felt about the size" of each site and to rate based on their "rational view" of their body. The participants were then required to use the light beam to demonstrate their ideal size for each site, as well as their ideal size for another female of their stature. Finally, body calipers were used to determine subjects' actual size.

Participants' size estimations of the three body sites (waist, hips, and thighs) differed according to the instructional protocol such that emotional ratings of size were significantly larger than actual size, ideal self, and ideal other ratings. Furthermore, the emotional estimate was 7.7% higher than the rational estimate, 16% greater than the actual, 19.7% greater than ideal self, and 25.2% grater than ideal other (Thompson & Dolce).

This study is congruent with other research findings that female body image is more detrimentally affected (as demonstrated by higher ratings) when respondents were instructed to base their ratings using affective/emotional measures, rather than cognitive measures (Bowden, Touyz, Rodriguez, Hensley, & Beumont, 1989; Franzen, Florin,

Schneider, & Meier, 1988; Proctor & Morley, 1986; Thompson & Psaltis, 1988). To date, this difference in measures has not been researched in the field of male body image.

Measures were selected for this proposed study that contain combined dimensions and assess feelings, thoughts, and behaviors related to body image (e.g., "I feel satisfied with the definition in my abs," "I think my arms should be larger," and "I try to look like sports athletes"). These combined dimension measures were selected based on support in previous literature that suggests they are psychometrically sound instruments (see measures in the methods section).

What Can Be Learned from Female Body Image Research?

Both men and women struggle with body dissatisfaction issues. The majority of body image research has focused on women's fight for social desirability through achieving an ideal body (Agliata & Tantleff-Dunn, 2004; Cohane & Pope, 2001). It is commonly accepted that modern media often portrays girls and women with an unhealthy, almost unattainable, thinness. The media is believed to be a pervasive force in determining cultural ideals of attractiveness and has been shown to negatively impact body image in females (see Groesz, Levine, & Murnen, 2002 for a meta-analytic review).

The negative impact of exposure to thin, idealized women on body image in girls and women has been well-documented. Groesz et al. (2002) conducted a meta-analytic review of over 25 studies since 1991 from journals that investigated factors impacting female body image. The researchers found that women's body image decreased significantly more after viewing women with a thin, ideal body type than after viewing images of women who were average, plus sized, or viewing images of inanimate objects (e.g., cars or houses). These research findings in female body image have lead

researchers to question if the idealized male bodies in the media also negatively affect men's body image.

Muscular Male Body in the Media

In light of the findings on female body image, researchers have begun investigating the impact of the media on male body image. However, the paradigm of research emphasizing thinness does not fit with male body image concerns. It seems that men are more concerned with having a muscular appearance, not just being thin (McCreary & Sasse, 2000). It appears that being underweight for men is just as detrimental to their body image as being overweight; while women are almost always striving to be thinner, men are more often striving to obtain greater body mass (Harvey & Robinson, 2003). Current media portrayals of muscled men may contribute to men becoming dissatisfied with their own bodies and lead them to alter their attitudes and behaviors in order to obtain these ideal bodies (Harvey & Robinson).

Silberstein, Striegal-Moore, Timko and Rodin (1988) investigated the relationships among body satisfaction, self-esteem, dieting, and exercise in 92 men and women. The researchers found that the majority of both sexes selected an ideal figure different from the way they perceived their own figure. However, there was a strong sex difference in the direction of the perceived ideal discrepancy; men were as likely to select a heavier ideal figure as a thinner ideal figure whereas all but one woman selected a thinner ideal figure (Silberstein et al.). This pioneering research study found that men exhibited no less body dissatisfaction than women, but that men were more likely than women to select a heavier figure as an ideal figure.

Agliata and Tantleff-Dunn (2004) recruited 158 male undergraduates at a large university in the southeast who were randomly assigned to either the appearance advertisement (experimental) group or nonappearance advertisement (control) group. The researchers created two 30-minute video segments that differed only in the advertisements between a show that was chosen for its neutral body content and lack of reference to sociocultural ideals. The experimental group included appearance-loaded advertisements whereas the control group included nonappearance-related advertisements. The appearance-loaded advertisements were selected through a pilot study; commercials were selected that contained actors judged to be the most indicative of the male ideal. The researchers found that participants exposed to ideal-image advertisements became significantly more depressed and had higher levels of muscle dissatisfaction, measured by visual analogue scales, following exposure than those who viewed neutral ads (Agliata & Tantleff-Dunn).

While the muscular male has long been idealized, the importance of attaining this ideal has become increasingly strong in the last several decades, which is evident and mirrored in the degree of muscular males displayed in the media. For men, a culture of muscularity has been intensified through outlets such as *Playgirl* and *Chippendales* debuting in the 1970's, to muscle movies such as *Rambo* in the 1980's, to unattainable muscular toy action figures, professional athletes, and the media in the 1990's and 2000's (Agliata & Tantleff-Dunn; Bartlett, Harris, Smith, & Bonds-Raacke, 2005). Male figures in all areas of media are becoming increasingly dense and muscular (Leit, Pope, & Gray, 2000; Pope, Olivardia, Gruber, & Borowiecki, 1999).

Pope et al. (1999) investigated G.I. Joe and Star Wars toy action figures, two of the top 10 best sellers for over 2 decades, and found the toys have grown significantly more muscular over the last 20-35 years and now exceed the muscularity of world-class body builders. Society is mirroring these changes in the ideal male body by emphasizing these almost unattainable images through outlets such as *Playgirl* centerfolds. These men have become more muscular in recent years, with the most drastic changes occurring in the 1990's; Leit et al. (2001) found the average *Playgirl* centerfold model had gained 27-pounds of muscle and lost 12-pounds of fat since the 1970's.

Media in Western countries portray the ideal female body as extremely slim and the ideal male body as both slim and muscular. Researchers found that the average man is aware of socially desirable appearances, follows diets, and frequently attempts to achieve the lean and muscular ideal (Cohane & Pope, 2001; Ogden & Mundray, 1996). However, the drive to achieve this ideal may get out of control and lead the individual into very unhealthy attitudes and behaviors.

Body Image among Non-Western Cultures and Minorities

Body image disorders afflict approximately 1-2% of Western men and appear to be rare in non-Western societies (Yang, Gray, & Pope, 2005). Along the same lines, anabolic-androgenic steroids are widely abused in the United States, Europe, and Australia, but appear to be extremely rare in non-Western societies (Yang et al., 2005). This has lead many researchers to question why these body image disorders and drugs seem to be so much more prevalent in Western societies.

Past findings on body image in men and women largely apply to Caucasian populations with little investigation of body image ideals of other racial groups and other

cultures. It has been suggested that other racial groups who reside in Western culture are less likely than Caucasians to adopt and internalize the body image ideal portrayed in the media. Abrams & Stormer (2002) found that White adolescent girls were more aware and had internalized the thin ideal more than African Americans. Consistent with these findings, Poran (2002) found that Black women specified an ideal body that was larger than that of White women and they had higher levels of body satisfaction than either White or Latino women. Finally, Molly & Herzberger (1998) found that Black middle and upper class women possessed a more positive body image than Black lower class women suggesting that the socioeconomic status may influence her body image. The findings of these studies suggest that Caucasian populations may be internalizing these societal ideals to a greater extent and, therefore, experiencing higher levels of body dissatisfaction but other factors (i.e., socioeconomic factors) may be playing a roll in different races.

Yang et al. found support for two possible explanations of why body image disorders may be more prevalent in Western culture: 1) Western men may harbor unrealistic body ideals, and 2) Western society is placing an increasing "value" on the male body. In support of the first prediction, Taiwanese men estimated only a 5-pound difference between the muscularity of an average man and the male body that women prefer. In contrast, European and American men estimated a 20-pound difference (Yang et al.). This supports the prediction that Western men may be overestimating the muscularity women prefer because they harbor these unrealistic body ideals.

In support of the second prediction, Yang et al. found that Taiwanese magazine advertisements portrayed nearly half of Western men and women in a state of undress,

but Asian men were shown undressed in only 5% of cases. In the same study, in American women's magazines dated from the 1950's to the 1990's, the proportion of undressed male models rose from as little as 3% to as much as 35%. Both of these findings support the second possible explanation that Western society is placing more and more value on the male body image.

The findings of these two studies combined lend to the notion that American culture, and perhaps other Western cultures, have become much more focused on male body appearance than non-Western cultures, such as Chinese culture (Yang et al.). The researchers proposed three hypotheses that may account for this difference: 1) Chinese culture places less emphasis on muscularity as a measure of masculinity, 2) Chinese men are less exposed to the muscular images common in Western media, and 3) Chinese men have experienced less decline in their traditional male roles as 'head of household' than men in the United States and other Western countries.

With these data, researchers have continued to question whether other cultures can continue to resist the influences of Western culture. In looking at analogous studies involving women, the prognosis does not seem promising. Becker, Burwell, Gilman, Herzog, and Hamburg (2002) looked at eating behaviors and attitudes following prolonged exposure to television among ethnic Fijian girls. The authors conducted this study because there were no published studies evaluating the psychological impact of introduction of television on disordered eating in media-naive populations. The researchers used a multi-wave cross-sectional design to compare two groups of Fijian adolescents before and after three years of exposure to Western television. This analysis in Fiji found striking differences in adolescent girls' body satisfaction after only three

years of exposure to Western television. Specifically, researches found higher rates of disordered eating as identified by dieting and self-induced vomiting behaviors to control weight among the adolescent girls exposed to Western television (Becker et al.). They also found that respondents living in a household with a television were three times more likely to endorse items indicating disordered eating. The researchers collected narrative data that revealed that the girls' interest in weight loss was motivated by the desire to model themselves after characters on television. This study suggests there is a negative impact of exposure to television upon eating attitudes and behaviors (Becker et al.). Exposure to Western media appears to be an important factor in body image disorders and striving for unrealistically thin female and muscular male bodies.

Body-Image Stereotypes and Body-Type Preferences

As determined through various studies, the current male muscular ideal is defined by a mesomorphic (athletic), broad shouldered figure with a well-developed upper body as opposed to an endomorphic (thin) or ectomorphic (overweight) body type (Grieve, Newton, Kelley, Miller, & Kerr, 2005; Tiggeman, 2002). The mesomorph body-type was originally defined as within normal limits but the current male muscular ideal goes beyond the original mesomorphic conceptualization. The current mesomorphic ideal is a hyper-muscular body-type that is oftentimes unattainable by the average male without engaging in extreme measures (i.e., excessive exercise and steroid use). The media associates the muscular ideal body image with a man who has a sense of self-control and power (Dibiase & Hjelle; Kirkpatrick & Sanders; Lerner & Korn; Lerner & Pool). Consequently, discrepancy arises when men compare this ideal body image to their actual body shape and size.

Muscularity is an essential feature of male body image. A vast amount of research dating back to the 1960's and 1970's led researchers to believe the muscular male is idealized (Dibiase & Hjelle; Iwawaki & Lerner, 1976; Kirkpatrick & Sanders; Lerner & Korn; Lerner & Pool; Wells & Siegel, 1961). In fact, researchers found these muscular individuals were overwhelmingly assigned positive personality traits such as strong, happy, and attractive, whereas individuals with a skinny or obese build were ascribed negative personality traits such as cheats, sneaky, and lazy (Dibiase & Hjelle; Kirkpatrick & Sanders; Lerner & Korn; Lerner & Pool).

Dibiase and Hjelle examined body-image stereotypes and body-type preferences among male college students. Participants included 17 students of each body-build: overweight, underweight, and normal weight. Individuals rated the three body-types (endomorph, mesomorph, ectomorph) on 21 bipolar traits of temperament. The researchers found that the mesomorph was rated more active, energetic, and dominant. In contrast, the endomorph and ectomorph were rated as more withdrawn, shy, and dependent. There was no relationship between stereotype ratings and participant's weight. However, all participants preferred to look like the mesomorph body-type (Diabiase & Hejelle).

Lerner and Korn looked at the development of body-build stereotypes in men. This study included three age groups (5-6 yr, 14-15 yr, 19-20 yr) of 60 boys and men (30 "chubby build" and 30 "average build"). The researchers conducted two sessions; in the first session, participants were 1) instructed to attribute 56 items to either a picture of an endomorph, a mesomorph, or an ectomorph, 2) evaluate items as "good" or bad" connotations, and 3) judge items as like or unlike themselves (Lerner & Korn,). In the

second session, participants identified their own body-build and their preferred physique as well as an explanation of their preference. Lerner and Korn found that all age groups held a predominantly favorable view of the mesomorph, a markedly unfavorable view of the endomorph, and a less negative but still unfavorable view of the ectomorph.

Similar results were found in Kirkpatrick and Sanders study on body image stereotypes. The participants consisted of 500 males and females ranging in age from 6-60. The individuals were asked to match 40 temperament/behavior descriptors to three silhouettes: an ectomorph, a mesomorph, and an endomorph. The results indicated that descriptors were differentially associated with body types according to age but not sex. Kirkpatrick and Sanders found that the mesomorph was overwhelmingly and consistently favored, although less so with age. The youngest participants (6-25 years old) rated the ectomorph more favorably than the endomorph, the middle-age participants (26-40 years old) rated them equally, and the oldest participants (over 40 years old) rated the endomorph more favorably than the ectomorph.

Media Exposure Measures

Research on the impact of media exposure on body image is lacking due in part to the non-specific measures being used. Many experimental studies have exposed men to advertisements or commercials featuring idealized male bodies and examined the impact on body dissatisfaction (see Blond, 2008 for a review). However, there is a lack of research exploring daily media exposure with emphasis on content (i.e., exposure to the idealized male body) and the relationship with body image outcomes.

Media exposure measures that have been used in past research have been broadly focused. Hatoum and Belle (2004) investigated the relationship between media

consumption and bodily concerns in 89 college men. The researchers asked participants to report the number of hours per week they spent watching television, watching movies, watching music videos, and reading magazines. They also had participants indicate which of 22 male-directed magazines they had at least skimmed through in the past month. Hatoum and Belle found that reading male-directed magazines was associated with concerns about muscularity and general fitness, beauty product use, and dietary supplement use to build muscle. They also found that men's media exposure was associated with their standards for women's bodies such that participants with more media exposure more intensely valued thinness in women.

Research topics involving media exposure and other constructs such as childhood obesity and aggression and violence seem to have the same problem with using a media exposure measure that is too general. Latner, Rosewall, and Simmonds (2007) looked at childhood obesity stigma and the association with television, video game, and magazine exposure. For each media outlet, the participants were required to report for the past week how many hours and minutes of viewing they usually spent on weekdays and weekends. The researchers found that media exposure was associated with stigmatizing attitudes toward obese children. However, this leads to the deeper question about what is it in the media that leads to these attitudes and warrants a more detailed media exposure measure.

Schooler and Ward (2006) examined the relationship between media to men's body attitudes and how these attitudes related to sexuality in 184 male undergraduates. To measure media use, the researchers asked participants about their regular television and magazine viewing. Participants were given a list of top-rated prime-time shows and were asked to indicate how often they watched each program based on a 5-point scale

ranging from "*every week*" to "*never/not this season.*" These ratings were scaled into hours per month according to the length of the show and the frequency it was viewed and sum scores were totaled indicating total monthly viewing hours. Schooler and Ward also created a total weekly viewing rating of music videos for each participant by asking them to report how many hours they spent watching them on a typical weekday afternoon, evening, night, and on a typical Saturday and Sunday. Participants were also asked to indicate how many issues they read per year of 12 popular magazines from which a variable reflecting total yearly issues read was created. Schooler and Ward found that regular media use was related to greater acceptance of the shape and performance of one's body but decreased comfort with aspects of one's body (i.e., hair and sweat). A limitation in this study is that the items used to collect media exposure were not directed towards media that portrays the ideal male body, and therefore, may not have been measuring the intended construct.

McCabe, Butler, and Watt (2007) investigated media influences on men and women's body perceptions in 120 participants. The researchers created and added the Media Exposure measure to the Media Influences Questionnaire originally designed by McCabe and Ricciardelli (2001). The original measure is designed to evaluate media messages participants receive regarding their body. It consists of 10 items that are ranked on a 5-point Likert-type scale ranging from (1) "*strongly agree*" to (5) "*strongly disagree*" (i.e., "The media gives me the idea that I should exercise more to be more muscular"). To add to this measure, McCabe et al. (2007) constructed a self-report questionnaire designed to assess participant's attitudes and exposure to the media. Using a 5-point Likert-type scale, the measure assessed current exposure (number of hours,

number of programs/magazines), initial exposure (age of first exposure to television/magazines), and perceived level of exposure compared with others. This media exposure measure, like others, does not account for the types of media the participant is viewing.

Tiggemann and Pickering (1996) investigated the relationship among exposure to television, body dissatisfaction, and drive for thinness in 94 adolescent women. The researchers assessed media exposure by having women circle which programs they had watched from the previous week and raters categorized the type of program. The researchers found that the total amount of television watched did not correlate with either body dissatisfaction or drive for thinness. However, Tiggemann and Pickering found that what mattered was the category of program that the women were watching. Specifically, amount of time watching soap operas and movies predicted body dissatisfaction and exposure to music videos predicted drive for thinness.

Tiggemann (2003) investigated the relationship among media exposure and body dissatisfaction and disordered eating in 104 female undergraduate students. Tiggemann measured media exposure by separating magazine and television exposure. For each source, participants reported the total amount of time spent viewing in the last month. The total number of different magazines read was summed as well as the time spent watching soap operas and music videos (based on Tiggeman and Pickering). Tiggemann found that both media exposure variables were correlated with body dissatisfaction, but the pattern of correlations was different among the other variables. Specifically, magazine exposure was positively correlated with internalization of thin ideals, while television exposure was negatively correlated with both awareness of sociocultural ideals

(awareness and internalization of body shape ideals presented in society) and self-esteem. Tiggemann concluded that there are different underlying processes operating to influence body dissatisfaction and advised future investigators to use more refined measures of media exposure to unveil the differences. To improve on past media exposure research, this study will focus solely on television media and will develop a more detailed media exposure measure that ensures the appropriate constructs are being measured.

Mediation: Internalization and Body Comparison

There are mixed results in male body image research as to whether or not exposure to idealized male images affects body dissatisfaction and drive for muscularity in men. Some researchers who have failed to find these exposure effects suggest that reaction to exposure is dependent on individual attributes (Humphreys & Paxton, 2004). It has been suggested that there may be mediating variables in the relationship between exposure to idealized male images and body dissatisfaction (Humphreys & Paxton). Research has supported this idea and analyses have revealed that both internalization of societal ideals and body comparison mediate this relationship. Measures of internalization assess agreement with appearance-related information. Measures of body comparison assess the frequency of comparing body regions relevant to weight and musculature to others.

There are many sociocultural factors contributing to body image dissatisfaction. Research has demonstrated that exposure to ideal body images leads to negative perceptions about one's body. Adolescents and young adults often seek out external sources to provide coherence to their identity (Vartanian, 2009). One of these external sources is the standards of attractiveness set by our society (i.e., thinness for women,

muscularity for men), which are heavily portrayed in television media. Most people are exposed to the same media images, but individuals internalize those societal standards to different degrees (Thompson & Stice, 2001). In the literature on female body image, it has been well documented that internalization of the thin ideal body is a strong predictor of body dissatisfaction (Cafri, Yamamiya, Branick, & Thompson, 2005; Cusumano & Thompson, 1997; Mautner, Owen, & Furnham, 2000; Vartanian). At the same time, internalization has been shown to mediate the relation between media influence and body dissatisfaction (Keery, van den Berg, & Thompson, 2004; Stice, Schupak-Neuberg, Shaw & Stein, 1994; Tiggemann, 2003). Research has found no significant difference between women and men in their overall degree of internalization as well as its ability to predict body image concerns (Cahill & Mussap, 2007; Humphreys & Paxton, 2004; Morry & Staska, 2001).

Cahill and Mussap (2007) examined how much emotional reactions following exposure to idealized bodies predict unhealthy body change attitudes and behaviors in 133 women and 93 men. They also explored whether select psychological traits mediate these effects. The researchers found that women post-exposure experienced increased state anger, anxiety, depression, and body dissatisfaction which correlated with drive for thinness and disordered eating symptomology. Men post-exposure experienced increased state body dissatisfaction, which correlated with muscle development. To test for mediation, Cahill and Mussap used Baron and Kenny's (1986) simple mediation analysis method and found that internalization and body comparison mediated these relationships for both men and women.

Humphreys and Paxton examined the impact of exposure to idealized male images on 106 adolescent boys' body image. The boys were divided into two image conditions. The boys in the experimental condition viewed media images of idealized males (male-ideal condition) while the boys in the control condition viewed media images of products (figure-free condition). Analyses revealed no significant changes in the experimental compared to the control conditions on Want Toned Body, Want to Change Body Shape, Depression and Anxiety Visual Analogue Scales (VAS) following image exposure following image exposure. There was, however, a significant improvement in Like Body Shape VAS. Humphreys and Paxton also examined potential mediating effects using the Baron and Kenny method. The researchers found in the experimental group, high internalization of the muscular, athletic ideal predicted more negative response on the Depression VAS after viewing the images. This study suggested that while adolescent boys in this research were not negatively affected by exposure to idealized males, reactions to exposure were dependent on individual attributes.

Morry and Staska (2001) examined the relationships among magazine exposure, self-objectification, body shape dissatisfaction, and eating disorder symptoms in men and women. Using the Baron and Kenny method, the researchers found that for men, reading fitness magazines predicted body dissatisfaction, mediated by internalization of the images.

While women who internalize societal standards of attractiveness are affected by exposure to ideal media images, research on men has yielded mixed results. Like women, men who internalize the ideal body presented in the media have increased body dissatisfaction. However, the difference between women and men lies in the magnitude

of the correlation, which, for men, is generally smaller. In other words, men experience internalization of sociocultural ideals but to a lesser extent than women (Cahill & Mussap, 2007; Cashel, Cunningham, Landeros, Cokley, & Muhammad, 2003; Halliwell & Harvey, 2006; Jones, 2004; Morry & Staska, 2001; Smolak, Levine, & Thompson, 2001). Men with a high degree of internalization have been shown to have increased concerns with body image as well as muscularity and building muscle mass (Cahill & Mussap; Smolak et al.).

Barlett, Vowels, and Saucier (2008) conducted a meta-analysis of the effects of media images on male body-image concerns. The results supported a strong link between sociocultural factors (specifically pressure from the mass media) and psychological factors (specifically negative self-image concerns). The meta-analyses also supported the indirect link between pressure from the mass media and behavioral and psychological outcomes. Additionally, evidence for a relationship between pressure from the mass media and two proposed mediating variables, internalization, and social comparison was found (Barlett et al.). Further, research has demonstrated support that both internalization and social body comparison are mediators of social influences on men's body dissatisfaction (Karazsia and Crowther, 2009).

Drive for Muscularity

Exposure to ideal male television likely influences more than just body dissatisfaction. In light of the muscular male ideal often portrayed in the media, men are becoming concerned and preoccupied about being muscular to match the ideal. Research beginning in the 1960's found that men often desired larger chests, wrists, shoulders, forearms, and especially biceps and this desire to be larger pertained to being more

muscular, not simply gaining weight (Hatoum & Belle, 2004). This desire is likely perpetuated by the fact that muscular body types have been assigned positive attributes by both adults and children (Hatoum & Belle).

Since ancient times, fitness and muscularity have been measures of masculinity as exemplified by Greek and Roman statues and the heroes of mythology (Yang et al., 2005). This emphasis on athleticism, fitness, and muscularity extends from the Olympic competitions of Greece to the muscular figures in early Hollywood westerns and American fitness magazines (Yang et al.). Yang et al. hypothesize that in many instances, the traditional male role, especially that of being "head of household," is becoming increasingly ambiguous. This was likely a significant symbol of masculinity for men, and this shift may have left men searching for something to fill that masculine void (Yang et al.).

Body Dysmorphic Disorder & Muscle Dysmorphia

Body Dysmorphic Disorder (BDD) is defined by the *DSM-IV-TR* as a condition marked by excessive preoccupation with an imaginary or minor defect in some part of the body. The diagnostic criteria specify that the preoccupation must cause a decline (i.e., time lost in obsessing about the "defect") in the various aspects of the individual's life (American Psychiatric Association, 2000). The *DSM-IV-TR* assigns BDD to the larger category of somatoform disorders, which are those characterized by physical complaints that are not substantiated by medical origin.

Although both men and women seem to be affected by the media, the negative consequences affect the sexes differently. Women are typically plagued by tendencies of anorexia nervosa and bulimia nervosa, while men are generally affected by a condition

known as muscle dysmorphia (MD), a subtype of BDD (Cohane & Pope, 2001). MD is not included in the *DSM-IV-TR*. MD is experienced when a person becomes obsessed with the idea that he is not muscular enough and muscular men perceive themselves as thin and underdeveloped when, in fact, they are often above average in musculature (Cohane & Pope). MD is sometimes referred to as bigorexia, vigorexia, reverse anorexia nervosa, or the Adonis Complex (Spitzer, Henderson & Zivian, 1999). Individuals with MD become preoccupied with thoughts concerning their appearance, especially how muscular they perceive themselves. They selectively focus on this perceived deficit failing to recognize their body image is not consistent with reality. This distorted body image present in MD often leads individuals to engage in dangerous behaviors such as steroid use. Also, MD impacts an individual's mood, often causing him to become depressed when he routinely engages in comparing his body to an unattainable ideal.

Pope, Gruber, Choi, Olivardia, and Phillips (1997) developed diagnostic criteria for MD for research purposes. First, the individual must be preoccupied and concerned that he or she is not muscular enough. Secondly, the preoccupation with being muscular must cause impairment in the individual's social, interpersonal, or occupational functioning as well as meeting two of the following criteria: a) the individual misses work-related, recreational, and social activities because of a compulsive need to workout and diet, b) the individual avoids events where he or she must expose the body and experiences extreme anxiety if exposed, c) the preoccupation with being muscular interferes with his/her ability to function in other important areas of life, d) the individual neglects the fact that the behaviors and activities he or she may engage in to increase muscle mass may be detrimental to the body, in spite of being aware of these dangers.

Finally, the individuals' primary focus is on the belief that he/she is "too small" or not muscular enough, as opposed to a fear of being fat or some other aspect of his or her physical appearance (Pope et al., 1997).

There are a number of cognitive, behavioral, sociocultural, emotional, and psychological factors that influence development of MD. Theory predicts that body dissatisfaction may be a key underlying condition to the development of MD. Grieve (2007) formulated a conceptual model of nine factors contributing to the development of muscle dysmorphia: body mass, media influences, ideal body internalization, low self-esteem, body dissatisfaction, health locus of control, negative affect, perfectionism, and body distortion. These factors were identified through literature on MD as well as literature involving women and eating disorders. Research suggests that ideal body internalization, body dissatisfaction, and body distortion are the three most important variables in the model (Grieve).

Limitations in Previous Research

There are a number of limitations in the research investigating the media effects on male body image. One is the lack of a detailed and precise media exposure measure that focuses on exposure to the ideal male. Most measures only take into account the amount of media consumed and fail to consider the content of the media observed. For example, there is likely a large difference in the effect of watching *American Idol* (FOX) as opposed to *The Bachelorette* (ABC) on male body image dissatisfaction. *American Idol* features many individuals of all body-types and attractiveness and does not emphasize and portray the ideal muscular male. This type of media exposure is unlikely to have a significant effect on male body image. On the other hand, *The Bachelorette*

contains 25 handsome, muscular, ideal men who are competing for one, gorgeous, thin, idealized woman.

Another limitation in research on male body image is the lack of more sophisticated mediation analyses methods. To date, there have been no mediation analyses of constructs related to male body image conducted using the more precise Preacher and Hayes (2008) method. Instead, studies have used the more simplified Baron and Kenny method. The more advanced Preacher and Hayes method allows for multiple mediators, statistical control of covariates, all possible pair-wise comparisons between indirect effects, and it produces bias-corrected and accelerated bootstrap confidence intervals in addition to percentile-based bootstrap confidence intervals. Therefore, this macro is far superior to previous simple mediation analyses.

Chapter II

Rationale and Hypotheses

The primary purpose of this study is to further explore the relationship of media exposure to body dissatisfaction and drive for muscularity in men and to test the mediation effects of internalization of societal ideals and body comparison. Research has just begun to reveal the negative effects of media exposure to idealized male bodies on men's psychological health (Agliata & Tantleff-Dunn; Hatoum & Belle; Humphreys & Paxton; Tiggemann). However, the current research is lacking in multiple areas. Currently, there is not a media exposure measure that captures both the amount and type of television the individual is watching.

Second, the few studies that have looked at mediators of media exposure and body image have only used simple mediation analysis methods that cannot test for multiple mediators or account for indirect effects. The proposed study will address these problems.

In light of the research and theory discussed in the previous section, this study has two primary hypotheses:

(H1) It is hypothesized that the relationship between television media exposure to the idealized male and body dissatisfaction will be mediated by internalization and by body comparison.

More specifically, it is hypothesized that the positive relationship between television media exposure to the idealized male, the independent variable (IV), as measured by the media exposure measure, and body dissatisfaction the first dependent variable (DV1), as measured by the Male Body Attitudes Scale (MBAS) will be mediated

by internalization, the first mediator (M1), as measured by the Sociocultural Attitudes Toward Appearance Questionnaire-3 (SATAQ-3) and by body comparison, the second mediator (M2), as measured by the Physical Appearance Comparison Scale (PACS) (see Figure 1).

To date there has been no study directly examining the meditational properties of internalization on the relationship between television media exposure to the idealized male and drive for muscularity in college students using an advanced mediation model.

(H2) It is hypothesized that the relationship between television media exposure to the idealized male and drive for muscularity will be mediated by internalization and by body comparison.

More specifically, it is hypothesized that the positive relationship between television media exposure to the idealized male (IV) as measured by the media exposure measure, and drive for muscularity, the second dependent variable (DV2), as measured by the Drive for Muscularity Scale (DMS) will be mediated by internalization (M1) as measured by the SATAQ-3 and by body comparison (M2) as measured by the PACS (see Figure 2).

Chapter III

Method

Participants

A power analysis was conducted in order to determine how many participants will be needed in the study. The power analysis was conducted with the general power analysis program, G*Power 3.0.10 (Faul, Erdfelder, Lang, & Buchner, 2007). Barlett et al. (2008) conducted a meta-analysis of the effects of media images on men's body image concerns. The results showed that the overall effect size was $d = -0.19$, $p < .0001$; CI: -0.21 to -0.17, suggesting that pressure from the mass media was significantly related to negative self-images. To control for the possible violation of the assumption of independence of effect sizes, Barlett et al. calculated one effect size per study using a weighted averaging procedure. The overall analysis showed effect sizes that were comparable to the initially calculated effect size, $d = -0.25$, $p < .0001$, CI: -0.29 to -0.20 which is considered a small to medium effect size based on Cohen's (1992) conventions. Based on linear multiple regression (fixed model, R2, deviation from zero), *a priori* statistical analyses (computing required sample size – given alpha, power, and effect size), a medium effect size (.15), an alpha level of .025 (based on a Bonferroni correction to control for experiment wide alpha inflation), an estimated power of .80, and one predictor, data will need to be collected from a minimum of 82 participants.

Participants in this study will be approximately 82 undergraduate male students between the ages of 18-28 at a Division 1, mid-sized, private university in the Midwest. Individuals will be recruited from the participant pool and will, therefore, all be students

in undergraduate psychology courses. For their participation they will receive credits in their psychology classes.

Measures

Demographic questionnaire. A demographic data questionnaire will be used to collect data on participant's personal background. The questionnaire, which was constructed for the purposes of this study, will include questions about the participant's age, year in school, height, weight, and ethnicity (see Appendix A).

Media exposure measure. The main predictor variable of interest is participants' exposure to muscular-ideal television. A procedure similar to that described by Harrison (2000), Aubrey et al. (2003), and Aubrey (2006) will be used for measuring and calculating exposure to the ideal male body in television. First, participants will estimate the number of hours of television they watch in a typical week rounded to the nearest hour or half-hour. Second, a list of current and popular television programs is created (using the Most Popular TV Shows list; TVGuide.com) and participants will indicate their frequency of viewing each show (0 = *never have seen the show*; 1 = *have watched a few times*; 2 = *have watched several times*; 3 = *have watched many times*; 4 = *rarely miss an episode*) (see Appendix B). Every show rated as "2" or higher will be considered a "watched show" and a list will be generated of the top watched shows (selection of these shows will be based on the distribution). Third, the list of the top shows along with a list of the main male characters for each show will be given to a separate, impartial sample of 15 male "judges" (research assistants) who will code the shows in order to obtain ratings of the muscular-ideal content. Judges will be educated about the three body types, mesomorph, endomorph, and ectomorph, as well as the mesomorph with additional

muscle (will term "mesomorph plus" for this study) and physical characteristics of the muscular-ideal male body. If a judge has not viewed at least three episodes of a show, he will indicate "not seen." Shows must be rated by at least 10 judges. If a show has not been watched by at least 10 judges, enough judges will be selected and required to watch up to three episodes and rate the show. Next, judges will indicate if each show contains a character(s) with a mesomorphic and/or mesomorphic plus body type by answering "yes" or "no." The purpose of this exercise is to orient the judges to the body types on the shows. Next, the judges will rate the show on the following question, "How much emphasis is given to this body type?" (0 = *none*, 1 = *slightly present but not critical to the events portrayed*, 2 = *present, but not critical to the events portrayed*, 3 = *present and somewhat critical to the events portrayed*, 4 = *present and critical to the events portrayed*) (see Appendix C). Only shows that can be consistently categorized (based on criteria defined below) will be included in the final measure. Shows with widely varying ratings (operationally defined as having standard deviations greater than or equal to two points on the 5-point scale) will be eliminated.

The "muscular-ideal" rating for each program will be comprised of the mean score of all judge's ratings. Finally, the muscular-ideal ratings of the shows will be multiplied by participants' frequency of viewing scores and the resulting cross products will be summed together for each participant. The resulting variable will reflect both frequency of viewing and content emphasis on the muscular-ideal body in the shows. In this study, the cross-product score of the media exposure measure will be used to represent the construct of exposure to ideal male television in the analyses and will, therefore, represent the independent variable in H1 and H2. Exploratory analyses will be

conducted to investigate whether different results are obtained from measuring the type of content watched versus only measuring the amount of television watched.

Sociocultural Attitudes Toward Appearance Questionnaire - 3 (SATAQ-3; Thompson, 2004). The SATAQ-3 is a 30-item self-report questionnaire that assesses various cognitive and behavioral dimensions of media influences on body image. The questionnaire yields four subscales, though only two will be analyzed in the present study: the 9-Item Internalization-General (Intern-Gen; possible range of scores is 9-45) and the 5-item Internalization-Athlete (Intern-Ath; possible range of scores is 5-25) scales. These two subscales in particular measure the construct of internalization and will be summed and analyzed together with higher scores reflecting higher internalization. The four subscales as a whole measure more general sociocultural attitudes toward one's own appearance. Intern-Gen assesses individual endorsement and acceptance of media messages that present unrealistic body figures such as, "I compare my body to the bodies of TV and movie stars." Intern-Ath measures endorsement and acceptance of an athletic body ideal such as, "I try to look like sports athletes." The other two subscales not used in this study are the 9-item Information subscale that assesses the importance of media for gathering information about being attractive and the 7-item Pressures subscale that assesses feeling pressured by media to strive for cultural ideals of physical appearance. Items are rated on a 5-point Likert-type scale, ranging from 1 (*definitely disagree*) to 5 (*definitely agree*).

A slightly modified version of the SATAQ-3 will be used which has been used in previous studies (Bardone-Cone, Cass, & Ford, 2008; Karazsia & Crowther, 2008; Smolak et al., 2001). Consistent with other studies, items that focused on "thinness" or

looking "pretty" and "thin" were reworded to focus on muscularity or looking "muscular" (e.g., Item #6 will be changed from "I've felt pressure from TV or magazines to look pretty" to "...to look muscular"). Previous research demonstrated that this revision yields reliable and valid scores with undergraduate men (Bardone-Cone et al.; Karazsia & Crowthe; Tylka, Bergeron, & Schwartz, 2005).

Karazsia and Crowther conducted the first study that evaluated the psychometric properties of the SATAQ-3 with a male sample. The researchers used confirmatory factor analysis to investigate the factor structure of the revised SATAQ-3 and found that all four factors demonstrated excellent concurrent and discriminant validity. For this sample, the internal consistency for the Intern-Gen and Intern-Ath scales were .94 and .85, respectively. The SATAQ-3 had good concurrent and incremental validity. The results supported that the SATAQ-3 scales were differentially related with measures of body image (Drive for Muscularity Scale-Body Image, McCreary & Sasse, 2000; Physical Appearance Comparison Scale, Thompson, Heinberg, & Tantleff, 1991) and psychological (Positive and Negative Affect Schedule-Negative Affect, Watson, Clark, & Tellegen, 1988) and behavioral (Drive for Muscularity Scale–Behavioral, McCreary & Sasse, 2000; Body Change Inventory-Increase Muscle Size, Ricciardelli & McCabe, 2002) constructs with small to medium effect sizes. These findings support the use of a slightly modified version of the SATAQ-3 with men. In this study, the total score of the Intern-Gen and Intern-Ath subscales will be used to represent the construct of internalization in the analyses and will, therefore, represent M1 in H1 and H2 (see Appendix D).

Physical Appearance Comparison Scale (PACS; Thompson et al., 1991). The PACS consists of five items that measure the cognitive and behavioral comparison of one's appearance to the physical appearance of others (e.g., "In social situations, I sometimes compare my figure to the figures of other people."). Individuals report the extent to which they engage in comparison behaviors using a 5-point Likert-type scale ("*never*" to "*always*") and the scores are added together. Higher scores indicate a greater tendency to engage in physical comparisons. This has been the most widely used scale to assess body-comparison and has been found to have good validity and adequate reliability (alpha ranging from .76-.95, test-retest =.72) (Schutz, Paxton, & Wertheim, 2002; Thompson et al., 1991). In this study, the average score of the PACS will be used to represent the construct of body comparison in the analyses and will, therefore, represent M2 in H1 and H2 (see Appendix D).

Drive for Muscularity Scale (DMS; McCreary & Sasse, 2000). The DMS is a 15-item assessment of cognitions, emotions, and behaviors related to preoccupation with and drive for muscularity. Items are scored on a 6-point Likert-type scale, ranging from "*never*" to "*always*" with higher scores indicating a higher drive to become more muscular. This scale has two factors, representing muscularity-oriented body image (DMS-Bod) and behavioral dimensions (DMS-Behav), both with demonstrated validity. DMS-Bod reflects body dissatisfaction, and DMS-Behav reflects motivation and behaviors to achieve muscularity. The total score will be used as an indicator of the participants drive to become more muscular.

Among male respondents, the DMS total score has internal consistency estimates ranging from .85 to .91 (Brunet, Sabiston, Dorsh, & McCreary, 2010; De

Young & Anderson, 2010; Kelley, Neufeld, & Musher-Eizenman, 2010; McCreary, Sasse, Saucier, & Dorsch, 2004). McCreary et al. (2004) concluded that the DMS has acceptable degrees of construct, convergent, and discriminant validity from the results of their analyses. Construct validity was demonstrated by showing that the total scores were significantly different between sexes, with males having higher scores. Convergent validity was demonstrated when analyses revealed that males who wanted to gain weight as well as males who weight trained more had higher DMS scores than those who did not want to gain weight and males who weight trained less. Discriminant validity was demonstrated when analyses revealed that the DMS was not correlated with the Eating Attitudes Test (McCreary et al.). In this study, the total score of the DMS will be used to represent the construct of drive for muscularity in the analyses and will therefore represent DV2 for H2 (see Appendix D).

The Male Body Attitude Scale (MBAS; Tylka et al., 2005). The MBAS is a 29-item scale designed to measure cognitive and affective components of body dissatisfaction in men. Participants respond on a scale ranging from 1 (*always*) to 6 (*never*) rating three body areas (muscularity, body fat, and height). Three subscales were derived through factor analysis: muscularity (13 items; e.g., "I think my arms should be larger"), low body fat (nine items; e.g., "I think I have too much fat on my body"), and height (two items, e.g., "I am satisfied with my height"). All 29 items are averaged to obtain a total score with higher scores indicating a greater degree of dissatisfaction. Cronbach alphas of .92 were reported for the total score, .90 for the muscularity subscale, .94 for low body fat, and .85 for height (Tylka et al.). Other researchers have found similar internal reliability coefficients ranging from .89-.93 for muscularity, .90-.92 for

low body fat, and .66-.88 for height (Grammas & Schwartz, 2009; Schwartz, Grammas, Sutherland, Siffert, & Bush-King, 2010). Convergent validity has been established because the MBAS total score has been related to the Body Esteem Scale which measures an individual's satisfaction with various aspects and parts of their body. The MBAS has discriminant validity as the total score and subscales were not related to impression management, a construct that is theoretically distinct from body dissatisfaction. Support of construct validity has been shown as the MBAS total score and subscale scores were related to self-esteem and eating disorder symptomology (Tylka et al.). In this study, the total score of the MBAS will be used to represent the construct of body dissatisfaction in the analyses and will therefore represent DV1 for H1 (see Appendix D).

Procedure

The university Institutional Review Board will review the proposed study. The media exposure measure will be developed based on the procedures used by Harrison (2000), Aubrey et al. (2003), and Aubrey (2006), as described previously. Upon approval, undergraduate students at Xavier University (participant pool members) will be able to read an announcement about the study on the participant pool bulletin. The announcement will contain information about the study, state that responses in the study will be kept confidential and have paper-tags with the web-address for the study for participants to take. The study will be put on an internet-based survey system (i.e., Survey Monkey). Responses that are collected through the survey system will be kept confidential and can be downloaded into an excel spreadsheet for easy analysis. Participants will be instructed to take the survey alone without the input of others.

When entering the acquired survey web-address into their web-browser, participants will be taken directly to the informed consent portion of the internet-based survey (Survey Monkey) (see Appendix E). Participants will read the informed consent and will be notified that completion of the surveys indicates consent to participate in the study. Participants who opt to consent to participating in the survey will then be prompted to complete the demographic questionnaire, the media exposure measure, SATAQ-3, PACS, DMS, and MBAS alone and without the input of other people. After completing the questionnaires, students will be sent to a new website with no connection to the first website. In the second website students will be prompted to enter their name, class, and professor. This information is collected for purposes of awarding credit only and the information will be in no way linked with the original survey responses. Upon completion of the survey, participants will be made aware of where to turn if they have questions regarding the study or about their rights as research participants (see Appendix F for debriefing statement).

Due to the length of the survey (approximately 30 minutes total) it is possible that participants may become fatigued toward the end of the survey and start filling in answers at random. In order to control for this and other order effects, the orders of the questionnaires in the survey will be randomized on Survey Monkey after (approximately) every 15 participants have completed the survey.

Chapter IV

Proposed Analyses

The primary purpose of this study is to examine the relationship among television exposure to the ideal male, internalization, body comparison, body dissatisfaction, and drive for muscularity. It is predicted that both internalization (M1) and body comparison (M2) will mediate the relationships between television exposure to the ideal male (IV) and body dissatisfaction (DV1) and drive for muscularity (DV2).

Multiple mediators will be tested simultaneously using Preacher and Hayes' (2008) mediation analysis and bootstrapping technique. This technique has several advantages over testing mediators separate using simple meditational models. Preacher and Hayes' technique is unique because it allows testing for multiple mediators, covariates, all possible pair-wise comparisons between indirect effects, and it provides the option to either test for accelerated bootstrap confidence intervals or percentile-based bootstrap confidence intervals which will be explained later.

Past research has often used Baron and Kenny's causal steps strategy for mediation analysis. Below is a review of the steps of this technique as well as a description of what is unique about Preacher and Hayes' method (e.g., the testing of indirect effects to yield point estimates using bootstrapping techniques). In Baron and Kenny's causal steps strategy, the first step of the mediation analysis is to demonstrate that there is a significant relationship between the independent variable (exposure to television media portraying the ideal male) and the dependent variables (drive for muscularity and body dissatisfaction) through logistic regression. The next step, in order for mediation to occur, is that the independent variable (exposure to television media

portraying the ideal male) has to account for changes in the mediators (internalization of societal ideals and body comparison). Third, the mediators have to account for part of the change in the dependent variables (drive for muscularity and body dissatisfaction). Mediation occurs when the relationship of the previous relationship between the independent and dependent variable becomes significantly smaller when the mediators are controlled for; the smaller the relationship between the independent and dependent variables – the stronger the mediator. In sum, this method estimates the paths of the model and assesses the extent to which the following criteria are met: Variable M is a mediator if X significantly accounts for variability in M, X significantly accounts for variability in Y, M significantly accounts for variability in Y when controlling for X, and the effect of X on Y decreases substantially when M is entered simultaneously with X as a predictor of Y.

Specifically in this study, it is expected that internalization of societal ideals and body comparison will mediate the relationship between exposure to television media portraying the ideal male and drive for muscularity and body dissatisfaction. That is, the relationship between exposure to television media portraying the ideal male and drive for muscularity and body dissatisfaction will become non-significant when the mediators are entered into the logistical regression.

Baron and Kenny's causal steps require testing mediators *separately* and include a series of multiple regressions as follows:

(H1)

1. Exposure to the ideal male in television media (IV) is significantly positively related to body dissatisfaction (DV1).

2. Exposure to the ideal male in television media (IV) is significantly positively related with internalization of societal ideals (M1) in the following ways: Those persons who have higher exposure to the ideal male in television media will have higher internalization of societal ideals as indicated by higher total scores on the SATAQ-3 (M1).
3. Body dissatisfaction (DV1) is significantly positively related with internalization (M1). Total scores on the SATAQ-3 (M1) will be positively related to body dissatisfaction.
4. The relationship between exposure to the ideal male in television media (IV) and body dissatisfaction (DV1) will be mediated by the SATAQ-3 (M1) total score. This will be indicated by the relationship between exposure to the ideal male in television media and body dissatisfaction becoming non-significant when controlling for SATAQ-3 (M1).

Using Baron and Kenny's technique would require using this four-step method twice for each hypothesis since this method only allows testing a single mediator at a time. The second series of steps for H1 would read as follows:

(H1)

1. Exposure to the ideal male in television media (IV) is significantly positively related to body dissatisfaction (DV1).
2. Exposure to the ideal male in television media (IV) is significantly positively related with body comparison (M2) in the following ways: Those persons who have higher exposure to the ideal male in television media will engage in more body comparison as indicated by higher total scores on the PACS (M2).

3. Body dissatisfaction (DV1) is significantly positively related with body comparison (M2). Total scores on the PACS (M2) will be positively related to body dissatisfaction.
4. The relationship between exposure to the ideal male in television media (IV) and body dissatisfaction (DV1) will be mediated by the PACS (M2) total score. This will be indicated by the relationship between exposure to the ideal male in television media and body dissatisfaction becoming non-significant when controlling for PACS (M2).

To test H2, these two series would be repeated replacing DV1 (body dissatisfaction with DV2 (drive for muscularity). The use of Preacher and Hayes' technique eliminates unnecessary work while providing more accurate results.

In light of Baron and Kenny's model, other statistical methods such as Preacher and Hayes' have been shown to account for the pitfalls of the traditional method. The first advantage of using Preacher and Hayes' technique is that it allows for testing the indirect effects of multiple mediators simultaneously (e.g., in this study internalization and body comparison), whereas Baron and Kenny's technique requires testing mediators separately. Thus, Preacher and Hayes' technique reduces the amount of inferential tests and the likelihood of making a Type I error. By conducting simultaneous multiple mediation, one can determine both if an overall effect exists for all mediators (total indirect effect) and the effect of each mediator (specific indirect effects). Also, one can determine the unique effect of each mediator while controlling for the other mediators. Second, Preacher and Hayes's technique also allows for testing the significance of the total indirect effects (i.e., the combined mediation of internalization and body comparison

in this study) as well as the specific indirect effects. Third, the method does not assume that the indirect effects are normally distributed as with Baron and Kenny's method and utilizes the bootstrapping technique to create a more empirically representative sample. Fourth, Preacher and Hayes' technique also has greater power than other methods while allowing for covariates.

Preacher and Hayes' utilize the bootstrapping technique to create a more empirically representative sample. The bootstrapping technique is accomplished by taking a sample size n (where n is the original sample size) from the data, sampling with replacement, and computing the indirect effect in each sample. For example, if 1,000 bootstrap samples have been requested, the point estimate of the indirect effect is simply the mean indirect effect computed over the 1,000 samples. The estimated standard error is the standard deviation of the 1,000 indirect effect estimates. This method will be implemented using the macros created and disseminated by Preacher and Hayes for use with Statistical Package for the Social Sciences. This method yields a percentile-based bootstrap confidence interval with endpoints. These endpoints can be adjusted to yield a bias-corrected or a bias-corrected and accelerated confidence interval. If zero is not between the upper and lower limit, then the researcher can report the indirect effect is not zero with 95% confidence. This is conceptually equivalent to rejecting the null hypotheses that the true indirect effect is zero at the 95% level of significance (Hayes, 2009).

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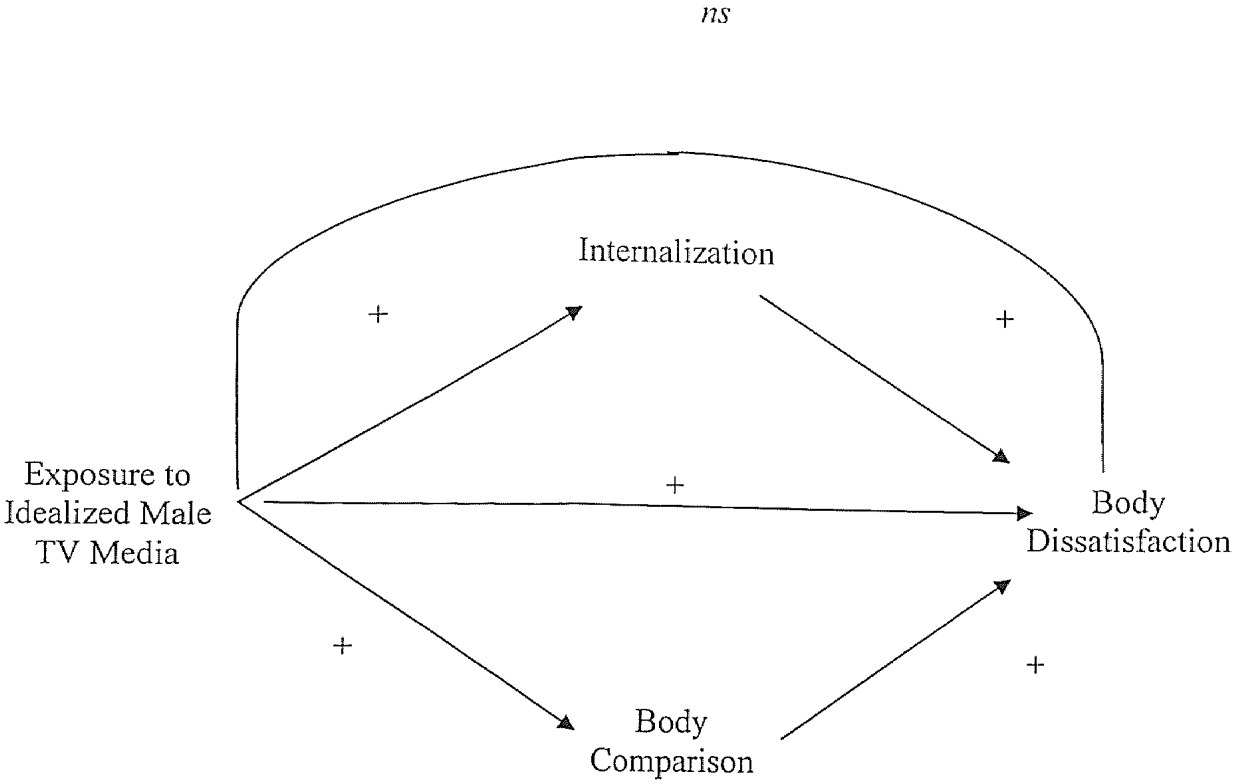

Figure 1. A path diagram of hypothesis 1 indicating that the relationship between exposure to idealized male TV media and body dissatisfaction is mediated by both internalization and body comparison. The + in the diagram represent the expected significant positive relationships between variables. The straight lines represent relationships between pairs of variables while the curved line represents the expected mediation when all variables are included in the model. It is expected that the relationship between exposure to idealized male TV media and body dissatisfaction will become non-significant when accounting for both mediators.

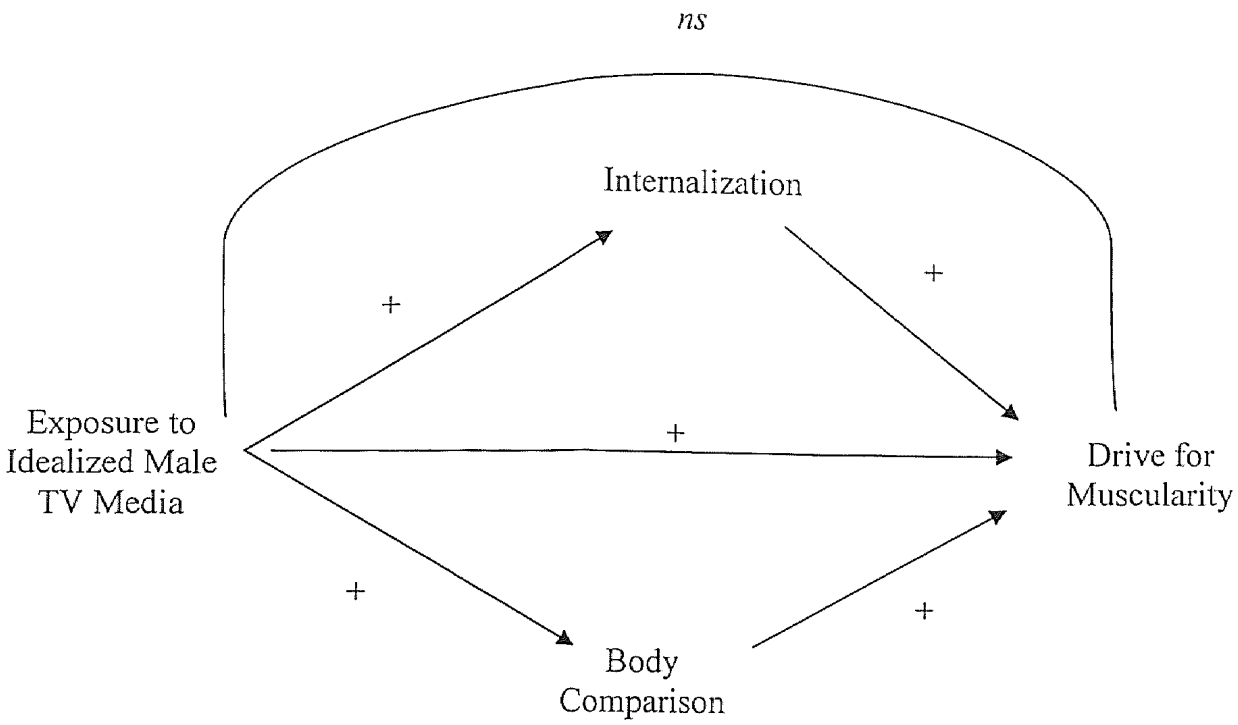

Figure 2. A path diagram of hypothesis 2 indicating that the relationship between exposure to idealized male TV media and drive for muscularity is mediated by both internalization and body comparison. The + in the diagram represent the expected significant positive relationships between variables. The straight lines represent relationships between pairs of variables while the curved line represents the expected mediation when all variables are included in the model. It is expected that the relationship between exposure to idealized male TV media and drive for muscularity will become non-significant when accounting for both mediators.

Appendix A

Demographic Questionnaire

1. Please enter the following information:

   Age: _____

   Height (in feet and inches): _____

   Weight (rounded to the nearest pound): _____

2. Ethnicity:

   Caucasian

   African American

   Asian American

   Latino

   Hispanic

   Mexican American

   Native American

   Other (please specify) _____

3. College Class:

   Freshman

   Sophomore

   Junior

   Senior

Appendix B

Media Exposure Measure

How many hours of television do you watch in an average week? _____ hours (rounded to the nearest hour or half-hour)

Rate your frequency of viewing for each show on the following scale:
0 = *never have seen the show*; 1 = *have watched a few times*; 2 = *have watched several times*; 3 = *have watched many times*; 4 = *rarely miss an episode*

Rank	TV Show	Rating
1	Dancing with the Stars	
2	Glee	
3	Criminal Minds	
4	NCIS	
5	American Idol	
6	Keeping Up with the Kardashians	
7	Big Brother 12	
8	Mad Men	
9	True Blood	
10	Weeds	
11	The Bachelorette	
12	So You Think You Can Dance	
13	Deadliest Catch	
14	Teen Mom	
15	Dancing with the Stars	
16	American Idol	
17	Lost	
18	NCIS	
19	Grey's Anatomy	
20	24	
21	Criminal Minds	
22	Keeping Up with the Kardashians	
23	Desperate Housewives	
24	Bones	
25	House	
26	Bad Girls Club	
27	Smallville	
28	Vampire Diaries	
29	Days of Our Lives	
30	Biggest Loser	
31	Secret Life of the American Teenager	

32	One Tree Hill
33	Damages
34	The Game
35	Nip/Tuck
36	Big Bang Theory
37	iCarly
38	Chuck
39	Lost
40	Supernatural
41	Ghost Whisperer
42	Wizards of Waverly Place
43	Family Guy
44	Young and the Restless
45	90210
46	Brothers & Sisters
47	Gossip Girl
48	Oprah Winfrey
49	Law & Order: Special Victims Unit
50	Hannah Montana
51	Legend of the Seeker
52	The Office
53	Fringe
54	Friday Night Lights
55	CSI: Miami
56	Glee
57	Eastwick
58	Heroes
59	Two and a Half Men
60	The Mentalist
61	Teen Mom
62	The Good Wife
63	Jersey Shore
64	The Unit
65	Burn Notice
66	How I Met Your Mother
67	Private Practice
68	Sons of Anarchy
69	Medium
70	Dr. Oz Show
71	General Hospital
72	Law & Order
73	Ugly Betty
74	America's Next Top Model

75	White Collar
76	Castle
77	Phineas and Ferb
78	Army Wives
79	Modern Family
80	NUMB3RS
81	Cold Case
82	Dateline NBC
83	Project Runway
84	All My Children
85	Masterpiece
86	True Blood
87	Human Target
88	Make It or Break It
89	Bold and the Beautiful
90	CSI: Crime Scene Investigation
91	Scrubs
92	Leverage
93	Cops
94	The Deep End
95	Spartacus: Blood and Sand
96	Dora the Explorer
97	Dollhouse
98	Mad Men
99	NCIS: Los Angeles
100	20/20
101	Big Love
102	Life Unexpected
103	Saturday Night Live
104	The Pregnancy Pact
105	Suite Life on Deck
106	Mercy
107	Girls Next Door
108	Extreme Makeover: Home Edition
109	The Middle
110	Doctor Who
111	Law & Order: Criminal Intent
112	So You Think You Can Dance
113	Cougar Town

Appendix C

Media Exposure Measure: Judges Coding Sheet

1) Indicate if each show contains a character(s) with a mesomorphic and/or mesomorphic plus body type by answering "yes" or "no."

2) Rate the show on the following question: How much emphasis is given to this body type? (0 = *none*; 1 = *slightly present but not critical to the events portrayed*; 2 = *present, but not critical to the events portrayed*; 3 = *present and somewhat critical to the events portrayed*; 4 = *present and critical to the events portrayed*)
* If you have not viewed at least three episodes, please indicate "not seen"

Rank	TV Show	Main Male Characters	Meso Y/N	Rating
1	Dancing with the Stars			
2	Glee			
3	Criminal Minds			
4	NCIS			
5	American Idol			
6	Keeping Up with the Kardashians			
7	Big Brother 12			
8	Mad Men			
9	True Blood			
10	Weeds			
11	The Bachelorette			
12	So You Think You Can Dance			
13	Deadliest Catch			
14	Teen Mom			
15	Dancing with the Stars			
16	American Idol			
17	Lost			
18	NCIS			
19	Grey's Anatomy			
20	24			
21	Criminal Minds			
22	Keeping Up with the Kardashians			
23	Desperate Housewives			
24	Bones			
25	House			
26	Bad Girls Club			
27	Smallville			

28 Vampire Diaries
29 Days of Our Lives
30 Biggest Loser
31 Secret Life of the American Teenager
32 One Tree Hill
33 Damages
34 The Game
35 Nip/Tuck
36 Big Bang Theory
37 iCarly
38 Chuck
39 Lost
40 Supernatural
41 Ghost Whisperer
42 Wizards of Waverly Place
43 Family Guy
44 Young and the Restless
45 90210
46 Brothers & Sisters
47 Gossip Girl
48 Oprah Winfrey
49 Law & Order: Special Victims Unit
50 Hannah Montana
51 Legend of the Seeker
52 The Office
53 Fringe
54 Friday Night Lights
55 CSI: Miami
56 Glee
57 Eastwick
58 Heroes
59 Two and a Half Men
60 The Mentalist
61 Teen Mom
62 The Good Wife
63 Jersey Shore
64 The Unit
65 Burn Notice
66 How I Met Your Mother
67 Private Practice
68 Sons of Anarchy
69 Medium
70 Dr. Oz Show

71 General Hospital
72 Law & Order
73 Ugly Betty
74 America's Next Top Model
75 White Collar
76 Castle
77 Phineas and Ferb
78 Army Wives
79 Modern Family
80 NUMB3RS
81 Cold Case
82 Dateline NBC
83 Project Runway
84 All My Children
85 Masterpiece
86 True Blood
87 Human Target
88 Make It or Break It
89 Bold and the Beautiful
90 CSI: Crime Scene Investigation
91 Scrubs
92 Leverage
93 Cops
94 The Deep End
95 Spartacus: Blood and Sand
96 Dora the Explorer
97 Dollhouse
98 Mad Men
99 NCIS: Los Angeles
100 20/20
101 Big Love
102 Life Unexpected
103 Saturday Night Live
104 The Pregnancy Pact
105 Suite Life on Deck
106 Mercy
107 Girls Next Door
108 Extreme Makeover: Home Edition
109 The Middle
110 Doctor Who
111 Law & Order: Criminal Intent
112 So You Think You Can Dance
113 Cougar Town

Appendix D

Instruments Used

The Sociocultural Attitudes Towards Appearance Questionnaire-3 (revised) (SATAQ-3) is protected by copyright so it is not included in this document. This measure can be found at http://bodyimagedisturbance.usf.edu/sat/index.htm

The Physical Appearance Comparison Scale (PACS) is protected by copyright so it is not included in this document. This measure can be found at http://jkthompson.myweb.usf.edu/physical_appearance_comparison.htm

The Drive for Muscularity Scale (DMS) is protected by copyright so it is not included in this document. This measure can be found at http://spartan.ac.brocku.ca/~dmccreary/Drive_for_Muscularity_Scale.html

The Male Body Attitude Scale (MBAS) is protected by copyright so it is not included in this document. This measure may be obtained by contacting the author Tracy Tylka at http://www.marpsy.net/bio/tracy.htm

Appendix E

Informed Consent Form

You are being given the opportunity to volunteer to participate in a project conducted through Xavier University. This study will evaluate the effects of television media exposure on male body image. Participants will complete a series of questionnaires pertaining to their media exposure and body dissatisfaction. It is important that these questionnaires are answered alone and without the input of other people. If you decide to participate in the project, please continue with the surveys. Completion of the surveys indicates your consent to participate in the study

If you have any questions at any time during the study, you may contact Megan Collins at collinsm5@xu.edu or at (859) 583-3000. You may also contact her dissertation chair and licensed psychologist, Dr. Nicholas Salsman at (513) 745-4289. Questions about your rights as a research subject should be directed to the Xavier University's Institutional Review Board at (513) 745-2870.

1. The purpose of this study is to research the effects of television media exposure on male body image.
2. You are eligible to participate because you are a male college student between the ages of 18-28.
3. If you agree to participate in this study you will be prompted to complete demographic information and four questionnaires. The questionnaires will ask you about your television viewing routine. You will be asked questions that assess various dimensions of media influences on your body image (*for example, I would like my body to look like the people who are on TV*), your attitudes and

behaviors related to preoccupation with and drive for muscularity (*for example, I think that my arms are not muscular enough*) as well as body satisfaction (*for example, I feel satisfied with the size and shape of my body*). The questionnaires vary in length and will take you approximately 30 minutes to complete.

4. There is minimal risk involved in participating in this study. In this study you will be asked to answer specific questions about your exposure to television media and body image. If you do not want to continue with this study, know that you do not have to participate and that you may withdraw from the study at any time.

5. There are no personal benefits for your participation in this study.

6. Data will be kept confidential. Although your name will be collected in order to provide you with credit for completing the survey, your name will not be connected to your survey responses. Therefore your answers will not be linked to you. If you choose to participate in the study you will be prompted to give your name, class, and professor at the end of the study. Gathering this information is solely for purposes of awarding you credit for your participation. The identifying information that you give will in no way be linked with your responses to the questionnaires, nor will it be saved on the same database.

7. Participants who are recruited through the university participant pool who complete the survey will have the opportunity to receive 30 minutes of credit.

8. Refusal to participate in this study will have no effect on any future services you may be entitled to from the University. You are free to withdraw from the study at any time, or to not participate, without penalty.

I have been given information about this research study and its risks and benefits and have had the opportunity to ask questions and to have my questions answered to my satisfaction. By clicking continue, I freely give my consent to participate in this research project.

Appendix F

Debriefing Statement

To receive credit for your participation, please click on the link below:

XXXX

Thank you for your time!

If you feel distress at any point in time during or after the study, counseling services are available free of charge. Xavier students have access to the Psychological Services Center (513-745-3531) and the Health and Counseling Center (513-745-3022). If you have any questions you may contact Megan Collins at collinsm5@xu.edu or at 859-583-3000. You may also contact her dissertation chair and licensed psychologist, Dr. Nicholas Salsman at (513) 745-4289. Questions about your rights as a research subject should be directed to Xavier University's Institutional Review Board at (513) 745-2870.

Chapter V: Dissertation

Abstract

The primary purpose of this study was to explore the relationship of media exposure to body dissatisfaction and drive for muscularity in a sample of 85 male college students. More specifically, the study was designed to test the mediation effects of internalization and body comparison in the relationship between media exposure and these body image-related outcomes. In light of the existing research, this study had two primary hypotheses: (H1) It was hypothesized that the relationship between television media exposure to the idealized male and body dissatisfaction is mediated by internalization and by body comparison and (H2) it was hypothesized that the relationship between television media exposure to the idealized male and drive for muscularity is mediated by internalization and by body comparison. Results revealed a positive relationship between internalization and body dissatisfaction ($B = .03$, $t = 5.08$, $p = .00$), a positive relationship between body comparison and body dissatisfaction ($B = .05$, $t = 2.31$, $p = .02$), and a positive relationship between body comparison and drive for muscularity ($B = .39$, $t = 3.95$, $p = .00$). No significant indirect effects (path *ab*) were evident as bootstrapping analyses produced a point estimate of .0025 and a 95% BCA of -.0019 to .0073, and a point estimate of .0332 and a 95% BCA of -.0265 to .0951. These results indicated an absence of significant mediation in both models. While mediation was not found in this study, the results add to an emerging body of literature on the impact of exposure to ideal male television on male body image concerns.

Size Matters: Television Media Effects on Male Body Image

There has been a change in the way society and the media portray the human body that corresponds with the increased desire in both men and women to achieve an ideal body. These changes in the media have prompted researchers to examine the impact the media plays on body image. The majority of body image research has focused on women's fight for social desirability through achieving an ideal body (Agliata & Tantleff-Dunn, 2004; Cohane & Pope, 2001). It is commonly accepted that modern media often portrays girls and women with an unhealthy, almost unattainable, thinness. The media is believed to be a pervasive force in determining cultural ideals of attractiveness and has been shown to negatively impact body image in females (see Groesz, Levine, & Murnen, 2002 for a meta-analytic review). These negative effects found in female body image research sparked a heightened awareness concerning the effects of exposure to the ideal male in the media on men's psychological health (Agliata & Tantleff-Dunn, 2004; Hatoum & Belle, 2004; Humphreys & Paxton, 2004; Tiggemann, 2003).

Initial research on the effects of media and male body image support a different paradigm than the one seen in female body image research. There is a clear emphasis on female thinness observed in the media and societal expectations. However, research supports that men are more concerned with having a muscular appearance over thinness (McCreary & Sasse, 2000). In fact, it appears that being underweight for men is just as detrimental to their body image as being overweight; while women are almost always striving to be thinner, men are more often striving to obtain greater body mass (Harvey & Robinson, 2003). Current media portrayals of muscled men may contribute to men

becoming dissatisfied with their own bodies and lead them to alter their attitudes and behaviors in order to obtain these ideal bodies (Harvey & Robinson).

As determined through various studies, the current male muscular ideal is defined by a mesomorphic (athletic), broad shouldered figure with a well-developed upper body as opposed to an endomorphic (thin) or ectomorphic (overweight) body type (Grieve, Newton, Kelley, Miller & Kerr, 2005; Tiggeman, 2002). The mesomorph body-type was originally defined as within normal limits but the current male muscular ideal goes beyond the original mesomorphic conceptualization. The current mesomorphic ideal extends into a hyper-muscular body type that is oftentimes unattainable by the average male without engaging in extreme measures (i.e., excessive exercise and steroid use). The media associates the muscular ideal body image with a man who has a sense of self-control and power (Dibiase & Hjelle, 1968; Kirkpatrick & Sanders, 1978; Lerner & Korn, 1972; Lerner & Pool, 1972). Consequently, discrepancy arises when men compare this ideal body image to their actual body shape and size, resulting in possible negative impacts on body image.

The primary purpose of this study was to examine the relationship among television exposure to the ideal male, internalization, body comparison, body dissatisfaction, and drive for muscularity. The theoretical underpinnings for each construct will be summarized and the empirical support about potential mediating relationships will be reviewed.

Television & Media Exposure to the Ideal Male

While the muscular male has long been idealized, the importance of attaining this ideal has become increasingly strong in the last several decades, which is evident and

mirrored in the amount which idealized muscular males are portrayed in the media. For men, a culture of muscularity has been intensified through outlets such as *Playgirl* and *Chippendales* debuting in the 1970's, to muscle movies such as *Rambo* in the 1980's, to unattainable muscular toy action figures, professional athletes, and the media in the 1990's and 2000's (Agliata & Tantleff-Dunn; Bartlett, Harris, Smith, & Bonds-Raacke, 2005). Male figures in all areas of media are becoming increasingly dense and muscular (Leit, Pope, & Gray, 2000; Pope, Olivardia, Gruber, & Borowiecki, 1999). As a result of these changes in the media, researchers have begun to investigate the consequences on men's psychological health.

Media Exposure Measures

Research on the impact of media exposure on body image is lacking due in part to the non-specific measures being used. Many experimental studies have exposed men to advertisements or commercials featuring idealized male bodies and examined the impact on body dissatisfaction (see Blond, 2008 for a review). However, there is a lack of research exploring daily media exposure with emphasis on content (i.e., exposure to the idealized male body) and the relationship with body image outcomes.

Media exposure measures that have been used in past research have been broadly focused. For example, Hatoum and Belle (2004) investigated the relationship between media consumption and bodily concerns by asking participants to report the number of hours per week they spent watching television, movies, music videos, and reading magazines. They also had participants indicate which of 22 male-directed magazines they had at least skimmed through in the past month. This gauge of media exposure may not capture the construct the researchers are interested in studying. While this captures the

amount of television media exposure, it does not collect information on the content the individual is watching. There is likely a different effect on body image outcomes dependent on if and how much of the show content contains idealized male characters.

Research topics involving media exposure and other constructs such as childhood obesity, aggression, and violence seem to have the same problem with using media exposure measures that are too general. Latner, Rosewall, and Simmonds (2007) looked at childhood obesity stigma and the association with television, video game, and magazine exposure. For each media outlet, the participants were required to report for the past week how many hours and minutes of viewing they usually spent on weekdays and weekends. The researchers found that media exposure was associated with stigmatizing attitudes toward obese children. However, this leads to the deeper question about what is it in the media that leads to these attitudes and warrants a more detailed media exposure measure.

Tiggemann and Pickering (1996) investigated the relationship among exposure to television, body dissatisfaction, and drive for thinness in 94 adolescent women. The researchers assessed media exposure by having women circle which programs they had watched from the previous week and raters categorized the type of program. The researchers found that the total amount of television watched did not correlate with either body dissatisfaction or drive for thinness. However, Tiggemann and Pickering found that what mattered was the category of program that the women were watching. Specifically, amount of time watching soap operas and movies predicted body dissatisfaction and exposure to music videos predicted drive for thinness, indicating there were different body image outcomes dependent on show content.

Tiggemann (2003) investigated the relationship among media exposure and body dissatisfaction and disordered eating in 104 female undergraduate students. Tiggemann measured media exposure by separating magazine and television exposure. For each source, participants reported the total amount of time spent viewing in the last month. Tiggemann found that both media exposure variables were correlated with body dissatisfaction, but the pattern of correlations was different among the other variables. Tiggemann concluded that there are different underlying processes operating to influence body dissatisfaction and advised future investigators to use more refined measures of media exposure to unveil the differences.

Body Dissatisfaction

Body dissatisfaction has been defined as significant disparity between one's ideal body type and one's actual body type and has been associated with depression, social anxiety, and low self-esteem (Cash, 1990; Frederick & Morrison, 1996; Thompson, 1992). Along the same lines, body dissatisfaction is a precursor to dieting and often precipitates disordered eating habits among both men and women (Twamley & Davis, 1999). These unhealthy body change behaviors may also include the use of steroids, beta-receptor agonists, and rigidly structured diets (Pope, Phillips, & Olivardia, 2000). With these known clinical implications, it is important to study what influences problematic body dissatisfaction.

The impact of exposure to thin, idealized women on women's body dissatisfaction has been well documented. Groesz et al. (2002) conducted a meta-analytic review of over 25 studies since 1991 from journals that investigated factors impacting women's body image. The researchers found that women's body image satisfaction decreased

significantly more after viewing women with a thin, ideal body type than after viewing images of women who were average, plus sized, or viewing images of inanimate objects (e.g., cars or houses). The current study examined if the same relationship exists between media exposure and male's body dissatisfaction.

Drive for Muscularity

Exposure to television that contains characters with an ideal male body likely influences more than just body dissatisfaction. In light of the muscular male ideal often portrayed in the media, men are becoming concerned and preoccupied about being muscular to match the ideal. Research beginning in the 1960's found that men often desired larger, more muscular chests, wrists, shoulders, forearms, and especially biceps (Hatoum & Belle, 2004). This desire is likely perpetuated by the fact that muscular body types have been assigned positive attributes by both adults and children (Hatoum & Belle).

Giles and Close (2008) examined the influence of popular magazines directed towards men and the role of relationship status on the association between internalization of appearance ideals and drive for muscularity in 161 male students from a university in the United Kingdom ranging in age from 18-36. The results supported internalization of appearance ideals to be a possible mediator of the relationship between male magazine exposure and both drive for muscularity and eating disturbance. These effects were significantly stronger among single men. These findings suggest preoccupation with attaining the ideal male body may be magnified by the exposure to traditional masculine ideals. This study also supports the theory that there are likely mediators that affect the relationship between exposure and body image outcomes.

Mediators: Internalization & Body Comparison

Some researchers have suggested that the impact of exposure to ideal appearance is mediated by individual attributes (Humphreys & Paxton, 2004). Analyses have revealed that internalization, an individual's agreement with societal messages about how one should look, may mediate the relationship between exposure and body image outcome measures. Adolescents and young adults often seek out external sources to provide coherence to their identity (Vartanian, 2009). One of these external sources is the standards of attractiveness set by our society (i.e., thinness for women, muscularity for men), which are heavily portrayed in television media. Most people are exposed to the same media images, but individuals internalize those societal standards to different degrees (Thompson & Stice, 2001).

In the literature on female body image, it has been well documented that internalization of the thin ideal body is a strong predictor of body dissatisfaction (Cafri, Yamamiya, Branick, & Thompson, 2005; Cusumano & Thompson, 1997; Mautner, Owen, & Furnham, 2000; Vartanian). At the same time, internalization has been shown to mediate the relation between media influence and body dissatisfaction (Keery, van den Berg, & Thompson, 2004; Stice, Schupak-Neuberg, Shaw & Stein, 1994; Tiggemann, 2003). Research has found no significant difference between women and men in their overall degree of internalization as well as its ability to predict body image concerns (Cahill & Mussap, 2007; Humphreys & Paxton, 2004; Morry & Staska, 2001).

Cahill and Mussap (2007) used an experimental design involving 133 women and 93 men to identify which psychological states are most reactive to short-term exposure to idealized bodies. They also looked at the similarities of these reactions between males

and females and whether certain psychological traits, including internalization and body comparison, mediate the relationship between state reactivity and long-term symptoms of unhealthy body change. Post-exposure, the researchers found that women experienced increased state anger, anxiety, depression, and body dissatisfaction which was significantly positively correlated with drive for thinness and disordered eating symptomology. Men post-exposure experienced increased state body dissatisfaction, which correlated with engagement in strategies to increase muscles. To test for mediation, Cahill and Mussap used Baron and Kenny's (1986) simple mediation analysis method and found that internalization (as measured by the SATAQ-3) and body comparison (as measured by the Body Comparison Scale) mediated these relationships for both men and women.

Humphreys and Paxton (2004) examined the impact of exposure to idealized male images on 106 adolescent boys' body image. The boys were divided into two image conditions. The boys in the experimental condition viewed media images of idealized males (male-ideal condition) while the boys in the control condition viewed media images of products (figure-free condition). Humphreys and Paxton examined potential mediating effects using the Baron and Kenny method and found that high internalization of the muscular ideal (as measured by the SATAQ-I) predicted more negative response on body image and depression measures after viewing the images. This study suggested that reactions to exposure were dependent on individual attributes.

Morry and Staska (2001) examined the relationships among magazine exposure, self-objectification, body shape dissatisfaction, and eating disorder symptoms in men and women. Using the Baron and Kenny method, the researchers found that internalization

mediated the relationship between reading fitness magazines and body dissatisfaction in men. For females, internalization mediated the relationship between reading beauty magazines and self-objectification and the relationship between reading magazines and eating problems (as measured by the Eating Attitudes Test). This study further supports the theory that psychological traits, especially internalization, mediate the relationship between media exposure and behavioral and emotional consequences.

While women who internalize societal standards of attractiveness are affected by exposure to ideal media images, research on men has yielded mixed results. Like women, men who internalize the ideal body presented in the media have increased body dissatisfaction. However, the difference between women and men lies in the magnitude of the correlation, which, for men, is generally smaller (Cahill & Mussap, 2007; Cashel, Cunningham, Landeros, Cokley, & Muhammad, 2003; Halliwell & Harvey, 2006; Jones, 2004; Morry & Staska, 2001; Smolak, Levine, & Thompson, 2001). In other words, men experience internalization of sociocultural ideals but to a lesser extent than women. Men may be impacted by these ideals to a lesser, but still clinically significant, degree. Men with a high degree of internalization have been shown to have increased concerns with body image as well as muscularity and building muscle mass (Cahill & Mussap; Smolak et al.).

Barlett, Vowels, and Saucier (2008) conducted two meta-analyses using 25 studies to determine the extent media pressure to conform to the ideal male affects male body image. The researchers found that pressure to conform from the mass media (internalization) was significantly related to men feeling worse (as measured by various body image outcome variables) about their bodies in both correlational and experimental

designs. More specifically, results suggested media pressure leads to increased body dissatisfaction, decreased body esteem, decreased self-esteem, increased psychological disorders (e.g., depression), and behavioral outcomes (e.g., excessive exercising). Additionally, evidence for a relationship between pressure from the mass media and two proposed mediating variables, internalization and social comparison, was found (Barlett et al.).

Limitations in Previous Research

There are a number of limitations in the research investigating the media effects on male body image. One is the lack of a detailed and precise media exposure measure that focuses on exposure to the ideal male. Most measures only take into account the amount of media consumed and fail to consider the content of the media observed. For example, there is likely a large difference in the effect of watching *American Idol* (FOX) as opposed to *The Bachelorette* (ABC) on male body image dissatisfaction. *American Idol* features many individuals of all body-types and attractiveness and does not emphasize and portray the ideal muscular male. This type of media exposure is unlikely to have a significant effect on male body image. On the other hand, *The Bachelorette* contains 25 handsome, muscular, idealized men who are competing for one, gorgeous, thin, idealized woman which seems more likely to impact male body image. To improve on past media exposure research, this study involved developing a more detailed media exposure measure that included both amount and content of television consumed to ensure that the appropriate constructs were being measured.

Another limitation in research on male body image is the lack of more sophisticated mediation analyses methods. To date, there have been no mediation

analyses of constructs related to male body image conducted using the more precise Preacher and Hayes (2008) method. Instead, studies have used the more simplified Baron and Kenny method. The more advanced Preacher and Hayes method allows for multiple mediators, statistical control of covariates, all possible pair-wise comparisons between indirect effects, and it produces bias-corrected and accelerated bootstrap confidence intervals in addition to percentile-based bootstrap confidence intervals. Therefore, this type of analysis is far superior to previous simple mediation analyses and was used in this study.

Purpose and Hypotheses

The primary purpose of this study was to further explore the relationship of media exposure to body dissatisfaction and drive for muscularity in men and to test the mediation effects of internalization of societal ideals and social body comparison. In light of the research and theory discussed, this study had two primary hypotheses:

(H1) It was hypothesized that the relationship between television media exposure to the idealized male and body dissatisfaction is mediated by internalization and by body comparison.

More specifically, it was hypothesized that the positive relationship between television media exposure to the idealized male, the independent variable (IV), as measured by the media exposure measure, and body dissatisfaction the first dependent variable (DV1), as measured by the Male Body Attitudes Scale (MBAS) would be mediated by internalization, the first mediator (M1), as measured by the Sociocultural Attitudes Toward Appearance Questionnaire-3 (SATAQ-3) and by body comparison, the

second mediator (M2), as measured by the Physical Appearance Comparison Scale (PACS).

To date there has been no study directly examining the meditational properties of internalization on the relationship between television media exposure to the idealized male and drive for muscularity in college students using an advanced mediation model.

(H2) It was hypothesized that the relationship between television media exposure to the idealized male and drive for muscularity is mediated by internalization and by body comparison.

More specifically, it was hypothesized that the positive relationship between television media exposure to the idealized male (IV) as measured by the media exposure measure, and drive for muscularity, the second dependent variable (DV2), as measured by the Drive for Muscularity Scale (DMS) would be mediated by internalization (M1) as measured by the SATAQ-3 and by body comparison (M2) as measured by the PACS.

Method

Participants

The participants were 85 undergraduate male students at a Division 1, mid-sized, private university in the Midwest. Individuals were recruited from the participant pool and were, therefore, all students in undergraduate psychology courses. Participants were required to be between 18-28 years of age. For their participation, they received credits in their psychology classes. The mean age of the sample was 20.6 years, with 81.2% of the sample being between 20-22 years old. Age ranged from 18-23 years old. With regard to ethnicity, 81.2% of the sample identified as Caucasian, 5.9% as African-American, 4.7% as Asian-American, 1.2% as Latino, 1.2% as Mexican-American, 4.7% as biracial, and

1.2% as "other." With regard to class standing, 5.9% were freshmen, 24.7% sophomores, 31.8% juniors, and 37.6% seniors. The average BMI of the sample was 24.3 with a standard deviation of 3.9 and ranged from 18.1-35.4. The sample population watched an average of 9.9 hours of television per week with a standard deviation of 8.1 and a range from 0-40 hours.

Measures

Demographic questionnaire. A demographic data questionnaire was used to collect data on participant's personal background. The questionnaire, which was constructed for the purposes of this study, included questions about the participant's age, year in school, height, weight, and ethnicity.

Media exposure measure. The main predictor variable of interest was participants' exposure to ideal male television. A procedure similar to that described by Harrison (2000), Aubrey et al. (2003), and Aubrey (2006) was used for measuring and calculating exposure to the ideal male body in television. These studies are the first to start incorporating not only amount of television exposure, but also the content. The current study is distinguished from these studies in that the construct of focus is exposure to the idealized male body. Constructs in previous research involved "thin-ideal" and "fat-character" media in Harrison, sexually oriented television in Aubrey et al., and sexually objectifying media in Aubrey.

First, participants estimated the number of hours of television they watch in a typical week rounded to the nearest hour or half-hour. Second, a list of current and popular television programs was created (using the Most Popular TV Shows list; TVGuide.com) and participants indicated their frequency of viewing each show (0 =

never have seen the show; 1 = *have watched a few times*; 2 = *have watched several times*; 3 = *have watched many times*; 4 = *rarely miss an episode*). Every show rated as "2" or higher was considered a "watched show" and a list was generated of the top watched shows. Third, the list of the top shows along with a list of the main male characters for each show was given to a separate, impartial sample of 15 undergraduate and graduate male "judges" (research assistants) who coded the shows in order to obtain ratings of the muscular-ideal content. Judges were educated about the three body types, mesomorph, endomorph, and ectomorph, as well as the mesomorph with additional muscle (will term "mesomorph plus" for this study) and physical characteristics of the muscular-ideal male body. If a judge had not viewed at least three episodes of a show, he indicated "not seen." Shows were required to be rated by at least 7 judges. If a show had not been watched by at least 7 judges, enough judges were selected and required to watch up to three episodes and rate the show. Next, judges indicated if each show contained a character(s) with a mesomorphic and/or mesomorphic plus body type by answering "yes" or "no." The purpose of this exercise was to orient the judges to the body types on the shows. Next, the judges rated the show on the following question, "How much emphasis is given to this body type?" (0 = *none*, 1 = *slightly present but not critical to the events portrayed*, 2 = *present, but not critical to the events portrayed*, 3 = *present and somewhat critical to the events portrayed*, 4 = *present and critical to the events portrayed*). Only shows that could be consistently categorized were included in the final measure. Shows with widely varying ratings (operationally defined as having standard deviations greater than or equal to two points on the 5-point scale) were to be eliminated. However, none of the shows fit in this category so all of the shows were used.

The "muscular-ideal" rating for each program was comprised of the mean score of all judge's ratings regarding emphasis on the muscular-ideal. Finally, the muscular-ideal ratings of the shows were multiplied by participants' frequency of viewing scores and the resulting cross products were summed together for each participant. The resulting variable reflected both frequency of viewing and content emphasis on the muscular-ideal body in the shows. In this study, the cross-product score of the media exposure measure was used to represent the construct of exposure to ideal male television in the analyses and, therefore, represented the independent variable in H1 and H2. Exploratory analyses were conducted to investigate whether different results were obtained from measuring both the amount and type of content watched versus only measuring the amount of television watched.

Sociocultural Attitudes Toward Appearance Questionnaire - 3 (SATAQ-3; Thompson, 2004). The SATAQ-3 is a 30-item self-report questionnaire that assesses various cognitive and behavioral dimensions of media influences on body image. The questionnaire yields four subscales, though only two were analyzed to capture the construct of internalization based on previous research by Karazsia and Crowther (2009). The subscales used to in the present study included the 9-Item Internalization-General (Intern-Gen; possible range of scores is 9-45) and the 5-item Internalization-Athlete (Intern-Ath; possible range of scores is 5-25) scales. These two subscales in particular measure the construct of internalization and were summed and analyzed together with higher scores reflecting greater internalization. The four subscales as a whole measure more general sociocultural attitudes toward one's own appearance. Intern-Gen assesses individual endorsement and acceptance of media messages that present unrealistic body

figures such as, "I compare my body to the bodies of TV and movie stars." Intern-Ath measures endorsement and acceptance of an athletic body ideal such as, "I try to look like sports athletes." Items are rated on a 5-point Likert-type scale, ranging from 1 (*definitely disagree*) to 5 (*definitely agree*).

A slightly modified version of the SATAQ-3 that had been used in previous studies was also utilized in the present study (Bardone-Cone, Cass, & Ford, 2008; Karazsia & Crowther, 2008; Smolak et al., 2001). Consistent with other studies, items that focused on "thinness" or looking "pretty" and "thin" were reworded to focus on muscularity or looking "muscular" (e.g., Item #6 was changed from "I've felt pressure from TV or magazines to look pretty" to "...to look muscular"). Previous research demonstrated that this revision yields reliable and valid scores with undergraduate men (Bardone-Cone et al; Karazsia & Crowther, 2008; Tylka, Bergeron, & Schwartz, 2005).

Karazsia and Crowther conducted the first study that evaluated the psychometric properties of the SATAQ-3 with a male sample. The researchers used confirmatory factor analysis to investigate the factor structure of the revised SATAQ-3 and found that all four factors demonstrated excellent concurrent and discriminant validity. For this sample, the internal consistency for the Intern-Gen and Intern-Ath scales were .94 and .85, respectively. The results supported that the SATAQ-3 scales were differentially related with measures of body image (Drive for Muscularity Scale-Body Image, McCreary & Sasse, 2000; Physical Appearance Comparison Scale, Thompson, Heinberg, & Tantleff, 1991) and psychological (Positive and Negative Affect Schedule-Negative Affect, Watson, Clark, & Tellegen, 1988) and behavioral (Drive for Muscularity Scale–Behavioral, McCreary & Sasse, 2000; Body Change Inventory-Increase Muscle Size,

Ricciardelli & McCabe, 2002) constructs with small to medium effect sizes. These findings support the use of a slightly modified version of the SATAQ-3 with men. In this study, the total score of the Intern-Gen and Intern-Ath subscales was used to represent the construct of internalization in the analyses and, therefore, represented M1 in H1 and H2.

Physical Appearance Comparison Scale (PACS; Thompson et al., 1991). The PACS consists of five items that measure the cognitive and behavioral comparison of one's appearance to the physical appearance of others (e.g., "In social situations, I sometimes compare my figure to the figures of other people."). Individuals report the extent to which they engage in comparison behaviors using a 5-point Likert-type scale ("*never*" to "*always*") and the scores are added together. Higher scores indicate a greater tendency to engage in physical comparisons. This has been the most widely used scale to assess body-comparison and has been found to have adequate validity and reliability (alpha ranging from .76-.95, test-retest =.72) (Schutz, Paxton, & Wertheim, 2002; Thompson et al., 1991). In this study, the average score of the PACS was used to represent the construct of body comparison in the analyses and, therefore, represented M2 in H1 and H2.

Drive for Muscularity Scale (DMS; McCreary & Sasse, 2000). The DMS is a 15-item assessment of cognitions, emotions, and behaviors related to preoccupation with and drive for muscularity. Items are scored on a 6-point Likert-type scale, ranging from "*never*" to "*always*" with higher scores indicating a stronger drive to become more muscular. This scale has two factors, representing muscularity-oriented body image (DMS-Bod) and behavioral dimensions (DMS-Behav), both with demonstrated validity. DMS-Bod reflects body dissatisfaction, and DMS-Behav reflects motivation and

behaviors to achieve muscularity. The total score was used as an indicator of the participant's drive to become more muscular.

Among male respondents, the DMS total score has internal consistency estimates ranging from .85 to .91 (Brunet, Sabiston, Dorsh, & McCreary, 2010; De Young & Anderson, 2010; Kelley, Neufeld, & Musher-Eizenman, 2010; McCreary, Sasse, Saucier, & Dorsch, 2004). McCreary et al. (2004) concluded that the DMS has acceptable degrees of construct, convergent, and discriminant validity from the results of their analyses. Construct validity was demonstrated by showing that the total scores were significantly different between sexes, with males having higher scores. Convergent validity was demonstrated when analyses revealed that males who wanted to gain weight as well as males who weight trained more had higher DMS scores than those who did not want to gain weight and males who weight trained less. Discriminant validity was demonstrated when analyses revealed that the DMS was not correlated with the Eating Attitudes Test (McCreary et al.). In this study, the total score of the DMS was used to represent the construct of drive for muscularity in the analyses and, therefore, represented DV2 for H2.

The Male Body Attitude Scale (MBAS; Tylka et al., 2005). The MBAS is a 29-item scale designed to measure cognitive and affective components of body dissatisfaction in men. Participants respond on a scale ranging from 1 (*always*) to 6 (*never*) rating three body areas (muscularity, body fat, and height). Three subscales were derived through factor analysis: muscularity (13 items; e.g., "I think my arms should be larger"), low body fat (nine items; e.g., "I think I have too much fat on my body"), and height (two items, e.g., "I am satisfied with my height"). All 29 items are averaged to

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obtain a total score with higher scores indicating a greater degree of dissatisfaction. Cronbach alphas of .92 were reported for the total score, .90 for the muscularity subscale, .94 for low body fat, and .85 for height (Tylka et al.). Other researchers have found similar internal reliability coefficients ranging from .89-.93 for muscularity, .90-.92 for low body fat, and .66-.88 for height (Grammas & Schwartz, 2009; Schwartz, Grammas, Sutherland, Siffert, & Bush-King, 2010). Convergent validity has been established because the MBAS total score has been related to the Body Esteem Scale which measures an individual's satisfaction with various aspects and parts of their body. The MBAS has discriminant validity as the total score and subscales were not related to impression management, a construct that is theoretically distinct from body dissatisfaction. Support of construct validity has been shown as the MBAS total score and subscale scores were related to self-esteem and eating disorder symptomology (Tylka et al.). In this study, the total score of the MBAS was used to represent the construct of body dissatisfaction in the analyses and, therefore, represented DV1 for H1.

Procedure

Prior to data collection, the university Institutional Review Board approved the study protocol to ensure compliance with human subjects standards. Upon approval, participants were recruited from the undergraduate psychology research pool. An announcement about the study was posted on the participant pool bulletin board. The announcement contained information about the study and displayed paper-tags with the web-address for the study for participants. The study was put on an internet-based survey system (i.e., Survey Monkey). Responses collected through the survey system were kept confidential and were downloaded into an SPSS spreadsheet for analysis.

When entering the acquired survey web-address into their web-browser, participants were taken directly to the informed consent portion of the internet-based survey. Participants read the informed consent and were notified that completion of the surveys indicates consent to participate in the study. Participants who opted to consent to participating in the survey were then prompted to complete the demographic questionnaire, media exposure measure, SATAQ-3, PACS, DMS, and MBAS alone and without the input of other people. After completing the questionnaires, students were directed to a new, unconnected website. In the second website, students were prompted to enter their name, class, and professor. This information was collected for purposes of awarding credit only and the information was in no way linked with the original survey responses. Upon completion of the survey, participants were given contact information if they had questions regarding the study or about their rights as research participants.

Due to the length of the survey (approximately 30 minutes total), the orders of the questionnaires in the survey were randomized on Survey Monkey after (approximately) every 10-15 participants in order to control for fatigue and order effects.

Results

The intercorrelations, means, and standard deviations for the study variables are presented in Table 1.

Analytic Strategy

Based on the literature, this study hypothesized that exposure to ideal male media would be associated with both higher levels of body dissatisfaction and higher drive for muscularity and that these relations could be explained by participants' level of internalization and body comparison. As such, the overarching hypothesis specified a

mediational model. The classic approach to mediation, as outlined by Baron and Kenny (1986), requires the predictor variable(s) – in this case the exposure to ideal male TV variable – be significantly related to both the outcome variable– in this case both body dissatisfaction and drive for muscularity – and the hypothesized mediational variable – in this case level of internalization and body comparison; the mediational variable must also show a significant relationship with the outcome variable, after accounting for the influence of the predictor variable.

While Baron and Kenny's classical approach reveals mediation, it has some limitations. As articulated by Preacher & Hayes (2008), Baron and Kenny's method can miss indirect effects as it requires significant relations between the predictor, the mediator, and the outcome variables. The indirect effect of the IV on the DV through an intervening variable (mediator) is quantified as the product of *a* and *b* and is interpreted as the amount that the DV is expected to change as the IV changes by one unit as a result of the IV's effect on the intervening variable which, in turn, affects the DV. Additionally, it requires multiple individual tests and increases the risk of Type 1 error. Furthermore, this model only allows testing for one mediational variable at a time, and therefore, was not the most appropriate model for this study.

With these limitations in mind, Preacher and Hayes (2008) have developed an alternative approach based on bootstrapping which allows for assessment of indirect effects (i.e., *ab*), in addition to all the paths in Baron and Kenny's method (i.e., *a*, *b*, *c*, and *c'*) in a single step. This method therefore reduces the chance of a Type 1 error. The bootstrapping method also allows for testing multiple mediators in the same model. This approach yields point estimates (i.e., unstandardized regression coefficients) in addition

to standard errors for each path. Bootstrapping enables a researcher to create an empirical representation of the indirect effects and yields point estimates and bias-corrected, accelerated (BCA) confidence intervals for each individual proposed indirect effect. Confidence intervals that do not include zero suggest significant mediation and that the indirect effects are different from zero. With these advantages, the current study utilized Preacher and Hayes' bootstrapping approach, one that had not yet been used in male body image research.

For all analyses, exposure to ideal male TV was assessed using the created media exposure measure, with higher scores being reflective of higher levels (both amount and content) of exposure. Body dissatisfaction was assessed using the MBAS, with higher scores being reflective of higher levels of body dissatisfaction. Drive for muscularity was assessed using the DMS, with higher scores being reflective of higher drive to become muscular. Internalization of ideal media was assessed using the SATAQ-3, with higher scores being reflective of higher levels of internalization. Body comparison of self to others was assessed using the PACS, with higher scores being reflective of higher levels of body comparison. In order to counterbalance the measures, the sequence of measures were rotated five times and was the control variable for all analyses. In the post-hoc analyses, BMI for each individual was calculated using his reported height and weight.

Primary Analyses

Prior to analyses, all variables were examined for normalcy. No significant violations were noted. The following specific hypotheses were tested:

(H1) It was hypothesized that the relationship between television media exposure to the idealized male and body dissatisfaction is mediated by internalization and by body

comparison. Hypothesis 1 predicted that the relationship between television media exposure to the idealized male (as measured by the media exposure measure) and body dissatisfaction (as measured by the MBAS) would be mediated by internalization (as measured by the SATAQ-3) and by body comparison (as measured by the PACS).

Using Preacher and Hayes' (2008) technique for assessing multiple mediators, the specific internalization and body comparison variables (i.e., SATAQ-3 and PACS) were tested for mediation of the relationship between television exposure to the idealized male and body dissatisfaction while controlling for survey order. The bootstrap estimates were based on a 5,000 bootstrap sample.

The total effect (path *c*: the relationship between ideal media exposure and body dissatisfaction), revealed a positive but non-significant relation ($B = .00$, $t = .16$, $p = .88$), indicating that ideal media exposure was not reliably correlated with body dissatisfaction. No direct effect (path *c'*: the relationship between ideal media exposure and body dissatisfaction, after accounting for the effects of internalization and body comparison), was observed since this relationship remained non-significant when the mediators (SATAQ-3 and PACS) were included ($B = -.00$, $t = -.75$, $p = .46$). No significant indirect effects (path *ab*) were evident as bootstrapping analyses produced a point estimate of .0025 and a 95% BCA of -.0019 to .0073 indicating an absence of significant mediation. There was no significant relationship from the IV to the mediators (*a* paths); however, there were direct effects of the mediators on the DV after controlling for the IV (*b* paths). A direct effect of internalization (SATAQ-3) on body dissatisfaction was observed ($B = .03$, $t = 5.08$, $p = .00$) indicating a significant positive relationship. In addition, a direct effect of body comparison (PACS) on body dissatisfaction was also observed ($B = .05$, *t*

= 2.31, p = .02) indicating a significant positive relationship. The specific pathway values (i.e., *a*, *b*, *c*, and *c'*) are shown in Figure 1.

(H2) It was hypothesized that the relationship between television media exposure to the idealized male and drive for muscularity is mediated by internalization and by body comparison. Hypothesis 2 predicted that the relationship between television media exposure to the idealized male (as measured by the media exposure measure) and drive for muscularity (as measured by the DMS) would be mediated by internalization (as measured by the SATAQ-3) and by body comparison (as measured by the PACS).

Using Preacher and Hayes' (2008) technique for assessing multiple mediators, the specific internalization and body comparison variables (i.e., SATAQ-3 and PACS) were tested for mediation of the relationship between television exposure to the idealized male and body dissatisfaction while controlling for survey order. The bootstrap estimates were based on a 5,000 bootstrap sample.

The total effect (path *c*: the relationship between ideal media exposure and drive for muscularity) revealed a positive but non-significant relation (B = .02, t = .39, p = .70) indicating that ideal media exposure was not reliably correlated with drive for muscularity. No direct effect (path *c'*: the relationship between ideal media exposure and drive for muscularity, after accounting for the effects of internalization and body comparison), was observed since this relationship remained non-significant when the mediators (SATAQ-3 and PACS) were included (B = -.01, t = -.28, p = .78). No significant indirect effects (path *ab*) were evident as bootstrapping analyses produced a point estimate of .0332 and a 95% BCA of -.0265 to .0951 indicating an absence of significant mediation. There was no significant relationship from the IV to the mediators

(*a* paths); however, there was a direct effect of internalization on drive for muscularity after controlling for the ideal media exposure ($B = .39$, $t = 3.95$, $p = .00$) indicating a significant positive relationship. The specific pathway values are shown in Figure 2.

Post-Hoc Analyses

For comparison, post-hoc analyses were computed using the number of hours of TV watched as the IV. The purpose of these analyses was to compare results using the more specific media exposure measure created for this study and the traditional method of capturing media exposure (number of hours watched). All relationships remained as they were in the primary analyses. For specific pathway values, see Figures 3 and 4.

Post-hoc analyses were also computed controlling for BMI. No significant relationship changes were revealed. There was a partial effect of BMI on body dissatisfaction in both the primary model (IV = media exposure measure; $B = .04$, $t = 2.44$, $p = .02$) and the post-hoc model (IV = hours watched; $B = .04$, $t = 2.33$, $p = .02$).

Discussion

In light of previous research on the negative effects of media exposure on female body image (see Groesz, Levine, & Murnen, 2002 for a meta-analytic review), the present study was undertaken to examine the effects of exposure to ideal male television on male body image. It was hoped this study could assist in understanding what role, if any, specific mediators play in the relationship among exposure, body dissatisfaction, and drive for muscularity.

The first aim of this study was to determine if internalization of the ideal male and body comparison of others mediate the relationship between ideal male television exposure and body dissatisfaction. These analyses revealed that ideal media exposure was

not reliably correlated with body dissatisfaction and no significant mediation was found. These results are inconsistent with some other studies (Keery, van den Berg, & Thompson, 2004; Stice, Schupak-Neuberg, Shaw & Stein, 1994; Tiggemann, 2003) that have found support for internalization mediating the effects of media on body image. However, a direct effect of internalization (SATAQ-3) on body dissatisfaction was observed indicating a significant positive relationship. After controlling for media exposure to the ideal male, the more men internalize messages from media, the more dissatisfied they are with their own body. This finding is in line with previous research that has found internalization to be a predictor of body dissatisfaction. This finding is well documented in female body image research (Cafri, Yamamiya, Branick, & Thompson, 2005; Cusumano & Thompson, 1997; Mautner, Owen, & Furnham, 2000; Vartanian, 2009) whereas results have been inconsistent in male body image research. Past research has found support for this relationship although the magnitude of the correlation has generally been smaller than in female body image research (Cahill & Mussap, 2007; Cashel, Cunningham, Landeros, Cokley, & Muhammad, 2003; Halliwell & Harvey, 2006; Jones, 2004; Morry & Staska, 2001; Smolak, Levine, & Thompson, 2001).

In addition, a direct effect of body comparison (PACS) on body dissatisfaction was also observed indicating a significant positive relationship. After controlling for media exposure to the ideal male, the more men compare their body with others, the more dissatisfied they are with their own body. This finding is in line with previous female body image research and adds to the literature on men in which the effects of social body comparison has been unclear. Previous conceptual (Thompson, Coovert, & Stormer,

1999) and empirical (Karazsia & Crowther, 2009) research suggested that social body comparison influences body dissatisfaction but more recent research failed to support this relationship (Karazsia & Crowther, 2010).

The second aim of this study was to determine if internalization of the ideal male and body comparison of others mediate the relationship between ideal male television exposure and drive for muscularity. These analyses revealed that ideal media exposure was not reliably correlated with drive for muscularity and no significant mediation was found. This runs contrary to previous findings such as those of Cahill and Mussap (2007) who found that internalization (SATAQ-3) and body comparison (Body Comparison Scale) mediated the relationship between state reactivity and long-term symptoms of unhealthy body change for both men and women. However, there was a direct effect of internalization on drive for muscularity after controlling for the ideal media exposure indicating a significant positive relationship. This finding is congruent with previous research that men with a high degree of internalization have increased concerns with body image as well as muscularity and building muscle mass (Cahill & Mussap; Karazsia & Crowther, 2010; Smolak et al.).

Finally, the post-hoc analyses were conducted to determine if there was, in fact, a difference between the type of exposure and the raw amount of exposure to television media. No significant differences were found in any of the relationships. In this study, there was no significant difference in analyses when using the traditional approach of measuring exposure using the number of hours watched and using the more precise media exposure measure created for this study.

These findings suggest that it may not be the amount or type of media exposure that influence body dissatisfaction, but rather personal characteristics and behaviors of how the media messages are interpreted. As demonstrated by the mediation analyses and intercorrelation matrix, there is a significant positive relationship between internalization and both body dissatisfaction and drive for muscularity. The more males internalize the messages they see in television media, the more dissatisfied they are with their own bodies. There is also a significant positive relationship between body comparison and both body dissatisfaction and drive for muscularity. The more males compare their own bodies with others, the more dissatisfied they are with their own bodies and the more they engage in behaviors to increase muscle mass. Finally, there is a significant positive correlation between body dissatisfaction and drive for muscularity. This result may support the theory that men who are dissatisfied with their own bodies tend to desire to be more muscular (Harvey & Robinson, 2003; McCreary & Sasse, 2000) verses "thinner" as in female body image research. However, future research should investigate if body dissatisfaction is, in fact, linked to behavior change and what these changes involve (i.e., dieting, lifting weights, taking nutrition supplements). In total, these results have important implications for understanding the factors that influence male body image.

Some limitations should be noted when interpreting these results. First, this study relied on self-report measures and future research may consider including behavior-based measures (for variables such as drive for muscularity) to further expand and clarify the relationships among these variables. In addition, the sample of undergraduate participants limits the generalizability of the findings. Future studies should examine individuals from more diverse age, race, and socioeconomic groups. The population used in this study

reported watching television well below the average individual. Future research should conduct similar studies and explore these relationships with different populations (i.e., military individuals, gym members). Next, the media exposure measure created for this study was not without limitations. Future media exposure measures should attempt to include sports and sport-related programs since they are an additional source of exposure to the ideal male. Future research should also attempt to control for primacy and recency effects among judges who are watching episodes of each show. Ideally, all judges would watch the same randomly chosen episodes and rate the program based on that experience alone. Along the same lines, researchers should continue to refine and create body image measures designed specifically for males. Many of the current measures are based on measures used in female body image research and may not capture the appropriate construct. Finally, the television shows used in creating the media exposure measure were gathered from "The Most Popular TV Shows" list on TVGuide.com and may have been somewhat outdated by the time participants were rating how often they watch each show. This list was updated on TVGuide.com right after data collection for the study began. Future research may attempt to use a more comprehensive and updated list of popular television shows at the time of study as well as try to minimize the time between measure creation, judging, and data collection. In spite of these limitations, this study added to an emerging body of literature on male body image

Conclusions

Even with these limitations, the results of the present study support previous findings in concluding that individual attributes likely play a key role in influencing body image (Humphreys & Paxton, 2004). The current results emphasize the importance of

understanding more clearly what individual attributes put men at risk for experiencing body image concerns. This is an important area that is lacking in research.

Future studies should examine the relationship other individual attributes might play in affecting body image.

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Table 1

Summary of Intercorrelations, Means, and Standard Deviations for Study Measures

Measure	1	2	3	4	5	6	7	8	9	M	SD
1. Age	-	.88**	.11	.13	-.12	-.20	-.04	-.19	-.23*	20.63	1.14
2. Class		-	.23*	.12	-.16	-.14	-.08	-.15	-.22*	3.01	.93
3. BMI			-	-.10	-.07	.14	.02	.31**	-.06	24.25	3.91
4. Hours Watched				-	.37**	-.05	-.05	-.19	-.12	9.90	8.10
5. Exp Ideal TV					-	.16	.03	-.01	.05	52.13	23.50
6. SATAQ						-	.45**	.59**	.50**	37.00	11.97
7. PACS							-	.45**	.35**	14.02	3.28
8. MBAS								-	.58**	2.75	.69
9. DMS									-	36.5	10.74

Note. For all scales higher scores are indicative of more extreme responding in the direction of the construct assessed, with the exception of class which was coded as 1 for freshman, 2 for sophomore, 3 for junior, and 4 for senior. Hours Watched = average amount of hours of TV watched per week; Exp Ideal TV = Exposure to Ideal Male TV total score; SATAQ = Sociocultural Attitudes Towards Appearance Questionnaire (Intern-Gen and Intern-Ath subscales) total score; PACS = Physical Appearance Comparison Scale total score; MBAS = Male Body Attitudes Scale average score; DMS = Drive for Muscularity Scale total score.
*$p < .05$. **$p < .01$.

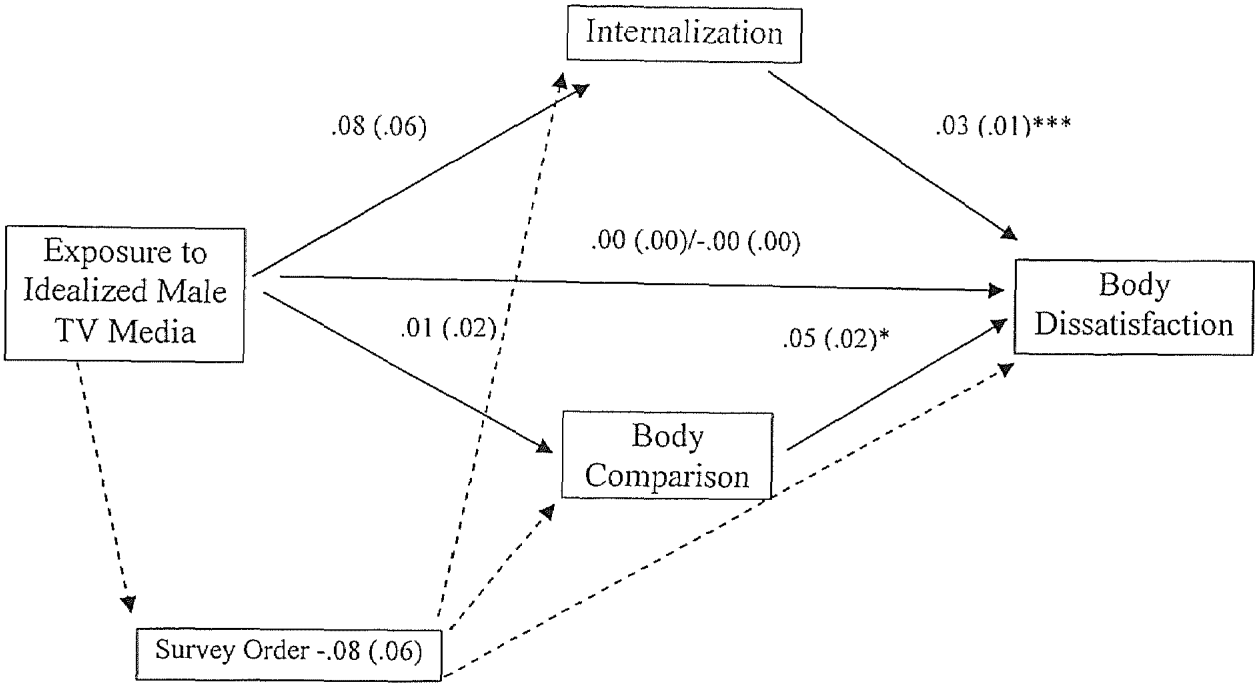

Figure 1. Test of a meditational model: Exposure to idealized male TV media as measured by a media exposure measure and body dissatisfaction as measured by the MBAS (Tylka et al., 2005) mediated through internalization as measured by the SATAQ-3 (Thompson, 2004) and body comparison as measured by the PACS (Thompson et al., 1991) after controlling for survey order. Path values represent unstandardized regression coefficients. Standard errors are in parentheses. Values before the slash represent the total effect (i.e., *c* path). Values after the slash represent the direct effect (i.e., *c'* path). * $p < .05$, ** $p < .01$, *** $p < .001$.

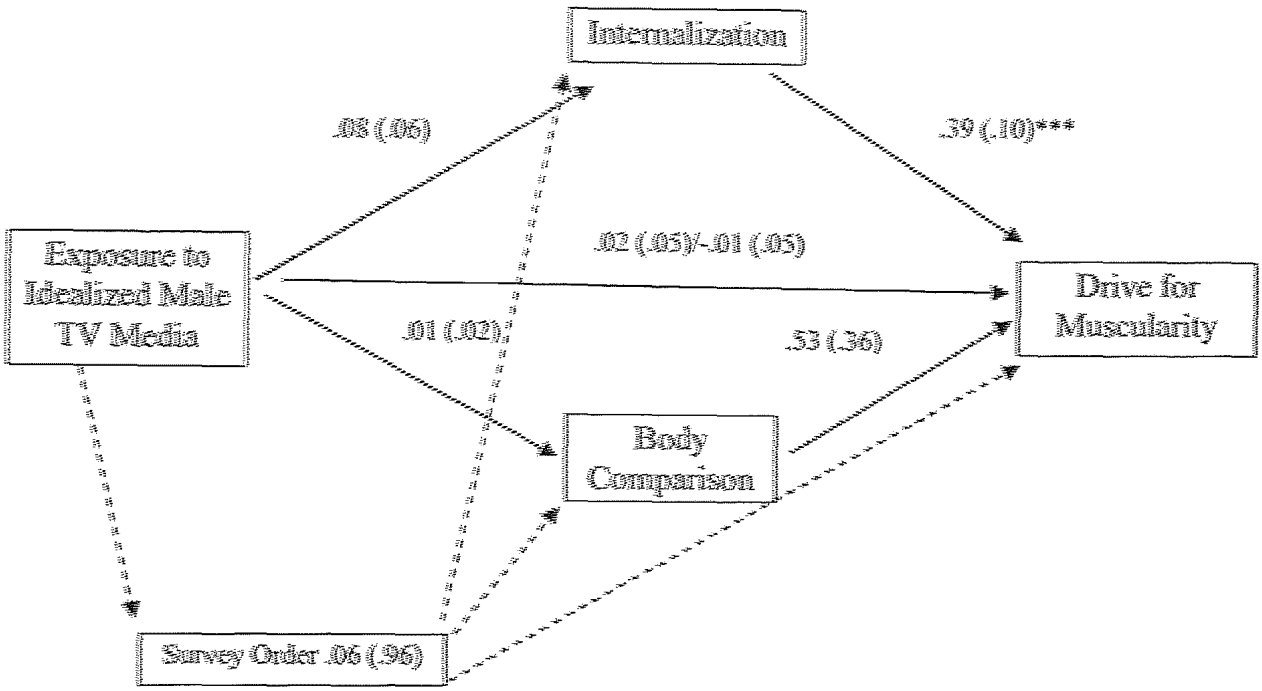

Figure 2. Test of a meditational model: Exposure to idealized male TV media as measured by a media exposure measure and drive for muscularity as measured by the DMS (McCreary & Sasse, 2000) mediated through internalization as measured by the SATAQ-3 (Thompson, 2004) and body comparison as measured by the PACS (Thompson et al., 1991) after controlling for survey order. Path values represent unstandardized regression coefficients. Standard errors are in parentheses. Values before the slash represent the total effect (i.e., *c* path). Values after the slash represent the direct effect (i.e., *c'* path). * $p < .05$, ** $p < .01$, *** $p < .001$.

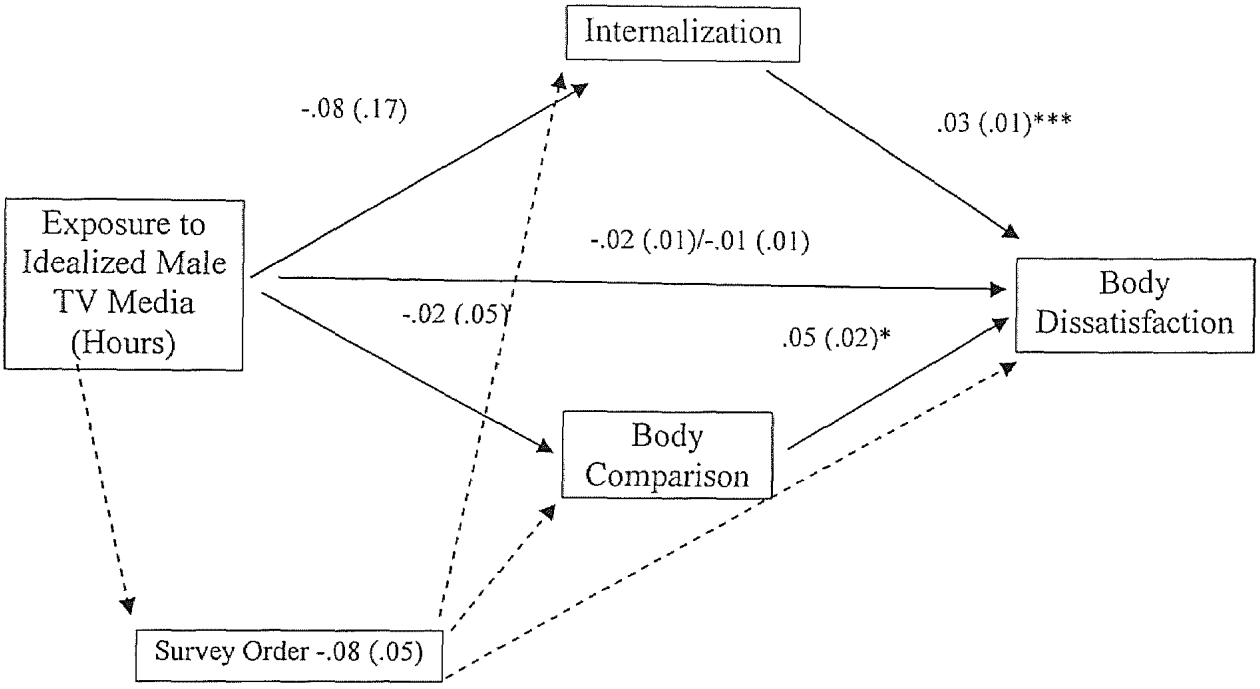

Figure 3. Test of a meditational model: Exposure to idealized male TV media as measured by number of TV hours watched and body dissatisfaction as measured by the MBAS (Tylka et al., 2005) mediated through internalization as measured by the SATAQ-3 (Thompson, 2004) and body comparison as measured by the PACS (Thompson et al., 1991) after controlling for survey order. Path values represent unstandardized regression coefficients. Standard errors are in parentheses. Values before the slash represent the total effect (i.e., *c* path). Values after the slash represent the direct effect (i.e., *c'* path). * $p < .05$, ** $p < .01$, *** $p < .001$.

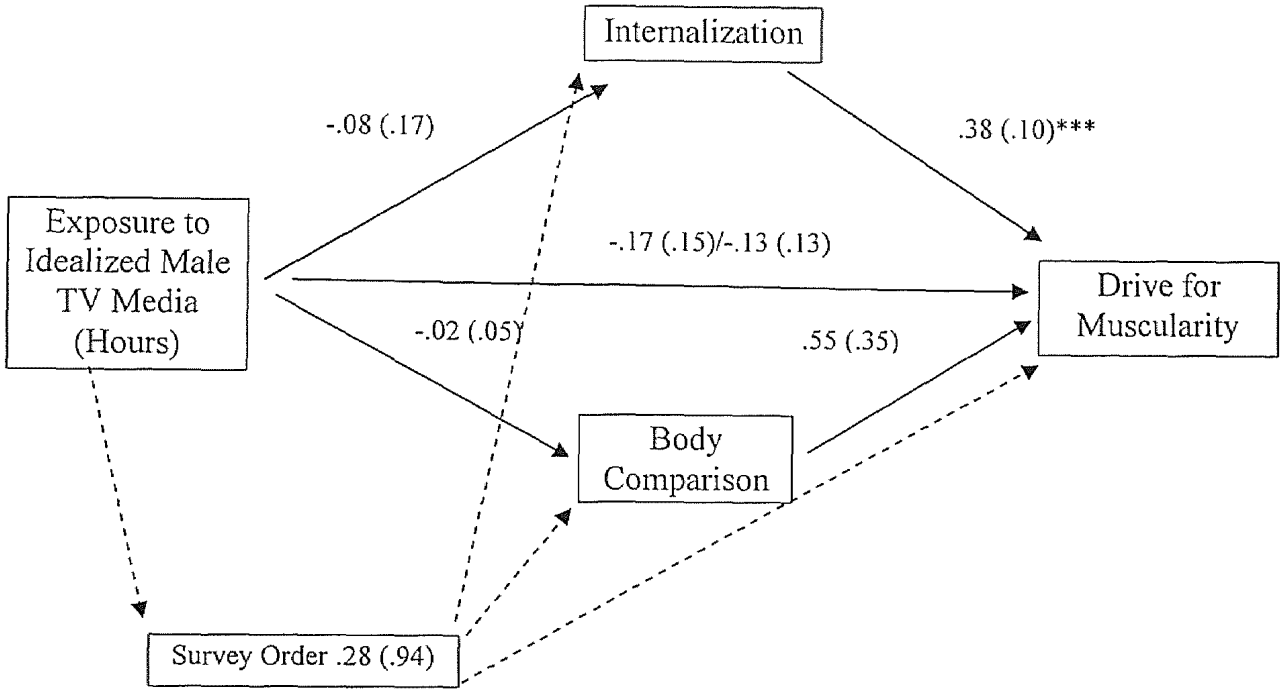

Figure 4. Test of a meditational model: Exposure to idealized male TV media as measured by number of TV hours watched and drive for muscularity as measured by the DMS (McCreary & Sasse, 2000) mediated through internalization as measured by the SATAQ-3 (Thompson, 2004) and body comparison as measured by the PACS (Thompson et al., 1991) after controlling for survey order. Path values represent unstandardized regression coefficients. Standard errors are in parentheses. Values before the slash represent the total effect (i.e., *c* path). Values after the slash represent the direct effect (i.e., *c'* path). * $p < .05$, ** $p < .01$, *** $p < .001$.

Appendix A

Institutional Review Board Approval Letter

December 20, 2010

Megan Collins
645 Main St.
Covington, KY 41011

Dear Ms. Collins:

The IRB has completed the review of your protocol #1035, *Size Matters: Television media Effects on male Body Image,* using expedited review procedures. We appreciate your thorough treatment of the issues raised and your timely response. Your study is approved in the Expedited category under Federal Regulation 45CFR46. Approval expires December 20, 2011. A progress report, available at http://www.xavier.edu/irb/forms.cfm, is due by that date.

If you wish to modify your study, including any changes to the approved Informed Consent form, it will be necessary to obtain IRB approval prior to implementing the modification. If any adverse events occur, please notify the IRB immediately.

We wish you success with your research!

Sincerely,

Morell E. Mullins, Jr., Ph.D.
Chair, Institutional Review Board
Xavier University

MEM/sb

c: Nicholas Salsman, advisor

Summary

Title: Size Matters: Television Media Effects on Male Body Image

Problem: Recently, research has demonstrated a heightened awareness concerning the negative effects of exposure to the ideal male in the media on men's psychological health (Agliata & Tantleff-Dunn, 2004; Hatoum & Belle, 2004; Humphreys & Paxton, 2004; Tiggemann, 2003). One of the first studies on male body image found that 95% of college-age men expressed dissatisfaction with some part of their bodies and 70% experienced a discrepancy between their current and ideal body shapes (Mishkind, Rodin, Silberstein, & Striegel-Moore, 1986). This dissatisfaction currently appears to be pervasive among the undergraduate male population with as many as 90% of students reporting a desire to be more muscular (Frederick et al., 2007). The relationship between perceptions of media messages and male body image concerns has received little attention. The primary purpose of this study was to explore the relationship of media exposure to body dissatisfaction and drive for muscularity and to test the mediation effects of internalization of societal ideals and social body comparison.

Method: The participants were 85 undergraduate male students at a Division 1, mid-sized, private university in the Midwest. The mean age of the sample was 20.6 years old. Regarding race, 81.2% of the sample identified as Caucasian, 5.9% as African-American, 4.7% as Asian-American, 1.2% as Latino, 1.2% as Mexican-American, 4.7% as biracial, and 1.2% as "other." With regard to class standing, 5.9% were freshmen, 24.7% sophomores, 31.8% juniors, and 37.6% seniors. The mean BMI of the sample was 24.3 and the sample population watched an average of 9.9 hours of television per week. The variables analyzed using Preacher and Hayes (2008) bootstrapping technique included television media exposure, internalization, body comparison, body dissatisfaction, and drive for muscularity.

Findings: Results revealed a positive relationship between internalization and body dissatisfaction ($B = .03$, $t = 5.08$, $p = .00$), a positive relationship between body comparison and body dissatisfaction ($B = .05$, $t = 2.31$, $p = .02$), and a positive relationship between body comparison and drive for muscularity ($B = .39$, $t = 3.95$, $p = .00$). No significant indirect effects (path *ab*) were evident as bootstrapping analyses produced a point estimate of .0025 and a 95% BCA of -.0019 to .0073, and a point estimate of .0332 and a 95% BCA of -.0265 to .0951 indicating an absence of significant mediation in both models. Post-hoc analyses were also computed controlling for BMI. No significant relationship changes were revealed. There was a partial effect of BMI on body dissatisfaction in both the primary model (IV = media exposure measure; $B = .04$, $t = 2.44$, $p = .02$) and the post-hoc model (IV = hours watched; $B = .04$, $t = 2.33$, $p = .02$).

Implications: These analyses revealed that ideal media exposure was not reliably correlated with body dissatisfaction or drive for muscularity and no significant mediation was found. These results are inconsistent with some other studies (Keery, van den Berg, & Thompson, 2004; Stice, Schupak-Neuberg, Shaw & Stein, 1994; Tiggemann, 2003)

that have found support for internalization mediating the effects of media on body image. These results also run contrary to previous findings such as those of Cahill and Mussap (2007) who found that internalization (SATAQ-3) and body comparison (Body Comparison Scale) mediated the relationship between state reactivity and long-term symptoms of unhealthy body change for both men and women.

These findings suggest that it may not be the amount or type of media exposure that influences body dissatisfaction, but rather personal characteristics and behaviors of how the media messages are interpreted. As demonstrated by the mediation analyses and intercorrelation matrix, there is a significant positive relationship between internalization and both body dissatisfaction and drive for muscularity. There is also a significant positive relationship between body comparison and both body dissatisfaction and drive for muscularity. Finally, there is a significant positive correlation between body dissatisfaction and drive for muscularity. This result may support the theory that men who are dissatisfied with their own bodies tend to desire to be more muscular (Harvey & Robinson, 2003; McCreary & Sasse, 2000) verses "thinner" as in female body image research. These results have important implications for understanding the factors that influence male body image. The current results emphasize the importance of understanding more clearly what individual attributes put young men at risk for experiencing body image concerns. This is an important area that is lacking in research and future studies should examine the relationship other individual attributes might play in affecting body image.