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Media Influence on Drive for Thinness and Drive for Muscularity

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Abstract

The present study investigated relationships between media influence (exposure, self-comparison to media ideals and internalization of media messages, societal pressure to have the perfect body, using media as a source of information about how to achieve a certain body ideal) and drive for thinness and drive for muscularity in 311 male and female undergraduates at a university in the Rocky Mountain region of the United States. We hypothesized that drive for thinness and drive for muscularity in both women and men would relate to body comparison/ internalization, societal pressure, use of media for information, magazine consumption and television viewing. We also expected television and magazines would have different influences on men and women's drive for muscularity and drive for thinness. Finally, we hypothesized that societal pressure and using media as a source of information would mediate the relation between media exposure (number of magazines read, hours of television watched) and drive for thinness and drive for muscularity in women and men. Students completed surveys on-line. Results revealed using media as a source of information on how to attain the ideal body mediates the relationship between drive for thinness and media exposure in women. Overall, it seems that media and the internalization of general/ non-athletic body ideals may have an impact on drive for thinness in both men and women. Similarly, internalization of athletic body ideals may relate to drive for muscularity in both collegiate men and women in the U.S. Implications for counselors were discussed.

Keywords: drive for thinness; drive for muscularity; media influence; internalized images

Introduction

With headlines on popular U.S. magazines like “Slim down and firm up fast,” “10 hunger fixes,” and “Transform your tush” on the latest issue of *Women's Health* magazine (www.womenshealthmag.com) and “Build muscle, shed pounds” and “chisel abs like these” (with a photo of Sullivan Stapleton's chiseled abs) on the accompanying cover of *Men's Health* magazine (www.menshealth.com), it's no wonder that body dissatisfaction has become normative in U.S. college students. Over 90% of U.S. collegiate women and 70% of U.S. collegiate men report body and weight dissatisfaction (Neighbors & Sobal, 2007). As social comparison theory (Festinger, 1954) postulates that people tend to compare themselves to others in an effort to fit the *normal* or *ideal*, it is not surprising that we find the need to compare ourselves to these images and find ourselves lacking (Tiggemann, 2011).

As noted in a recent issue of *Sex Roles* (Ambwani, 2013), the gender-based appearance pressures seem to differ in the type of ideal body presented. Whereas magazines for women focus on slimness, men's magazines focus on building muscle. It is no wonder that men and women may experience body dissatisfaction in different ways, with women being more likely to report wanting to lose weight (drive for thinness) and men being more likely to report wanting to gain muscle mass (drive for muscularity; Neighbors & Sobal, 2007). However, these paradigms might be changing. As media increasingly emphasizes fitness, firming up and toning on the cover of women's magazines (www.womenshealthmag.com), Choi hypothesized that drive for muscularity may be increasing in Western women (e.g., Australia, U.S., U.K., parts of Europe) as society emphasizes physical exercise as part of an ideal lifestyle (Choi, 2000). Thus, the purpose of the present study was to examine media influence on both drive for thinness and

drive for muscularity in U.S. collegiate men and women. Although our review of relevant literature predominantly includes studies from the U.S., we have also sought to include research from other countries as body image concerns are becoming more prevalent in other countries as Western media seeps into other societies. Country of study has been indicated for all non-U.S. studies. Any studies where the country is not identified is a U.S. study.

The present study extends social comparison theory and the research on media influence on body image in three ways: 1) Research on gender-based appearance pressures has indicated that media negatively influences college women's drive for thinness and men's drive for muscularity. However, few studies (Jacobi & Cash, 1994) have evaluated media's impact on college women's drive for muscularity and men's drive for thinness. As Choi (2000) indicated that the drive for muscularity is becoming more prevalent in women, it is important to ascertain whether media factors influence the drive in women. In addition, as one-third of collegiate men want to gain weight and two-thirds want to lose weight (Neighbors & Sobal, 2007), it appears that drive for thinness may be apparent in collegiate men as well as collegiate women. Thus, media's influence on drive for thinness in collegiate males needs to be assessed. 2) As a study of Australian collegiate women found that women spend an average of 2 hours a month looking at magazines and nearly 12 hours a week watching television (Tiggemann, 2003), it would seem that television viewing might be more detrimental to body image due to the sheer number of hours college women spend watching TV. However, research suggests that reading magazines (Tiggemann, 2003) - due to their requirement of a stronger emotional investment - may be more detrimental to body dissatisfaction than viewing television, despite the difference in time allotment. It may be that whereas magazines are used for information, television is primarily used for entertainment (Harrison & Cantor, 1997). However, few studies have examined whether magazines and television do in fact differ in their influence in both collegiate men and women and whether they differ for both drive for thinness and drive for muscularity. Although U.S. high school students do not differ in television viewing habits according to gender (Lowry, Wechsler, Galuska, Fulton, & Kann, 2002), research suggests that adult women living in Ireland may be more likely to read magazines than men (Stevens, Maclaran, & Catterall, 2007). The potential gender difference in media consumption patterns begs the question of whether magazines will be as powerful an influence on men as they are on women. 3) Most studies examine the influence of one type of media influence (e.g., media exposure or internalization). As will be discussed below, there are several types of potential media influence on gender-based appearance pressure. The present study will examine five (exposure, body comparison to/ internalization of general media standards, body comparison to/ internalization of athletic media standards, societal pressure to have the perfect body, and use of media for information on how to meet body ideal schemas) of these types of media influence to ascertain how they relate to drive for thinness and drive for muscularity in U.S. collegiate men and women.

Media Exposure

U.S. media's representation of men and women is becoming increasingly more restrictive (Daniel & Bridges, 2010) and may be contributing to the escalation of body dissatisfaction (Tiggemann, 2011). Female models in the United States are generally 15% below the average female weight (Hawkins, Richards, Granley, & Stein, 2004) and Western (e.g., United States, New Zealand) media trends suggest that women must be thin but still have an athletic, toned, and tight body (Markula, 1995). Thus, it is perhaps not surprising that a meta-analysis of media influence found a relationship between exposure to media images depicting the thin-ideal body and body image concerns in women (country of each study was not specified; Grabe, Ward, & Hyde, 2008). Men are also under pressure, as the current Western (e.g., United States, Australia) male ideal is presented as being both lean and muscular, with a well-developed chest and arms, wide shoulders, and a narrow waist (Hargreaves & Tiggemann, 2004). Thus, the media prototypes for both men and women that are being presented in the United States, Canada, Australia, New Zealand, the U.K., and Western Europe establish a body ideal that may be impossible for many people to realistically and healthily achieve.

Media Susceptibility

The detrimental effects of body dissatisfaction cannot be attributed to media alone, as research on male and female undergraduates in Canada suggests (Morry & Staska, 2001). A recent review by Levine and Murnen (2009) indicates that while media engagement is certainly a risk factor, it is not a causal risk factor. A study conducted on female undergraduates in the Netherlands suggested that this may be due to the fact that some individuals are more susceptible to media influence than are others (Anschutz, Engels, & Van Strien, 2008). But what makes some individuals more susceptible to media images? A review of research conducted in the U.S., Spain, and Australia

(López-Guimerà, Levine, Sánchez-Carracedo, & Fauquet, 2010) suggests that there are three processes that mediate the relationship between media exposure, body dissatisfaction, and disordered eating behaviors, including body comparison to/internalization of the ideal image presented in the media – both athletic and non-athletic images, societal pressure to achieve the ideal body, and activation of the media ideal schema (López-Guimerà, Levine, Sánchez-Carracedo, & Fauquet, 2010). The following paragraphs will discuss each of these in turn.

Body Comparison and Internalization of the Ideal Body Type

Research conducted in the United States indicates that body dissatisfaction manifests when media ideals are internalized as personal goals and those goals are not met (Agliata & Tantleff-Dunn, 2004; Thompson & Stice, 2001). For instance, in the United States, a study of female adolescents revealed that media displays ideal bodies young women may believe they can realistically attain (Botta, 1999). When young women internalize the goal of achieving the perfect body by comparing themselves to images presented in the media, this can result in a decrease in body satisfaction that can lead them to pursue unhealthy behaviors to obtain the media ideal (Botta, 1999). Furthermore, exposure to different types of body images correlate with different types of body dissatisfaction. For example, collegiate men who report comparing themselves to athletic male images report more dissatisfaction with their level of muscularity, whereas those who report comparing themselves to general media images do not (Karazsia & Crowther, 2008). However, Italian young women who report higher levels of general internalization (comparing themselves to non-athletic images) display higher levels of weight-related body dissatisfaction than do those who report higher levels of internalization of athletic images (Stefanile, Matera, Nerini, & Pisani, 2011). Thus, it seems that media exposure is not what causes body dissatisfaction; rather it is internalizing the media and societal ideal via body comparison to non-athletic or athletic images of the ideal body. In fact, based on studies of male and female college students in the U.S., Thompson and Stice (2001) report internalization of media images is a causal risk factor for body-image and eating disturbances. It appears that collegiate men may be more influenced by athletic images (Karazsia & Crowther, 2008) whereas women might be more influenced by non-athletic images of the ideal body (Stefanile et al., 2011).

Societal Pressure to Achieve the 'Ideal' Body Image

The social comparison theory (Festinger, 1954), argues that people tend to compare themselves to others with respect to certain attributes (e.g., thinness, muscularity), especially when the characteristics are important to them. Given the strong emphasis on appearance in contemporary Western societies and the frequency with which we, as a society, are inundated with ideal images on a daily, if not hourly, basis, it is no wonder that we find the need to compare ourselves to these images and take extraordinary measures to look like them (Tiggemann, 2011). Once individuals have internalized these ideal images, the images are used as a comparison point for their own body image goals. This effect of internalizing media images is seen in an Australian study that showed an increase in body dissatisfaction when male and female adolescents believe they are lacking, meaning they 'fail' to meet the social and cultural standards (Hargreaves & Tiggemann, 2004). This sense of lack results in an increase of societal pressure to meet the ideals set forth by the media, as demonstrated by studies of male and female adolescents in China (Chen & Jackson, 2012) and male and female college students in the United States (Chen & Jackson, 2012; Fernandez & Pritchard, 2012). According to sociocultural theory, this is why body image dissatisfaction has become normative in men and women in contemporary Western society (Tiggemann, 2011).

Activation of 'Ideal' Schema and Use of Media as a Source of Information

Once media images have been internalized and women and men have begun to compare themselves to media images in an effort to see how they "stack up," they form a schema about the ideal body and how the ideal person would obtain this body. This schema is based on sociocultural influences and represents information and beliefs referring to the self and one's self-worth (Levine & Smolak, 1996, 2005; López-Guimerà et al., 2010). Furthermore, the relationship between media exposure and body dissatisfaction is mediated by activation of this schema and body comparison to these media images, according to a study of male and female Chinese adolescents (Eyal & Te'eni-Harari, 2013). Thus, it makes sense that once the schema has been established, these individuals will turn to the same media sources from where they obtained the schema for information on how to meet the ideal image (Levine & Smolak, 1996, 2005).

Present Study

The pervasiveness of the drive for thinness and drive for muscularity is cultivated by the influence of media. A recent U.S. study suggests that when women are exposed to sexualized images of female athletes, such as Anna Kournikova's *Sports Illustrated* swimsuit spread, they tend to make negative self-evaluations when discussing the photograph (Daniels, 2012). In fact, 89.7% of participants made comments about the women's physical appearances and expressed jealousy or admiration. This effect is paralleled in female high school students in Australia who report a higher drive for muscularity after viewing sports television (Tiggemann, 2005) and decreased weight-based body dissatisfaction after watching soap operas, movies, and sports television (Tiggemann & Pickering, 1996). The destructiveness of media's influence is also present in men. After viewing images of men who possess the ideal male body (e.g., large muscles, tone physiques, lean stomachs, and broad chins), U.S. college men's self-esteem decreases (Hobza & Rochlen, 2009; Peterson, Paulson, & Williams, 2007).

Although there are clearly many factors that influence the drive for thinness and drive for muscularity in men and women, a portion of this negative influence may be attributed to media's extolment of body ideals. As U.S. college students spend nearly 3 hours a day consuming various types of media (e.g., social networks, television, on-line video, etc.; Panek, 2014), it is important to assess how media may relate to body image in this population. In addition, there has been some suggested that different types of media outlets may have contrasting influences on drive for thinness and drive for muscularity. Although there are many types of media that may influence college student's body image (e.g., video games, movies, television, magazines, social networks), the present study focused on two - magazines and television - as a New Zealand study found interesting gender differences in how different types of media related to body image concerns in male and female college students (Miller & Halberstadt, 2005). For example, in collegiate women, television viewing correlated with awareness of social pressure to be thin as well as a more negative self-perception of their body image. Magazine consumption in women, on the other hand, related to internalization of and body comparison to general (non-athletic) media ideals. In contrast, while magazine consumption in men was also related to internalization of and body comparison to general media ideals, none of the body image factors correlated significantly with television consumption (Miller & Halberstadt, 2005). The latter finding - that magazines play a more powerful role in predicting internalization of and body comparison to media ideals is consistent with Tiggemann's (2003) work with female Australian adolescents, which found that magazines exert a more powerful influence on body image than does television viewing. According to research conducted in Canada (Vaughan & Fouts, 2003) and Australia (Tiggemann, 2003), magazines - due to their requirement of a stronger emotional investment (i.e., consumers read this material to gain advice about beauty, fitness, grooming and style rather than simply for entertainment) - may be more detrimental to body image than television. This suggests that in a male and female college student population in the United States, television will be used primarily for entertainment and viewers do not seem to be as affected by thin television models and actors (Harrison & Cantor, 1997). Although magazines and television display the ideal body for both men and women, the two types of media may have a different impact on drive for thinness and drive for muscularity, and this may differ by gender (Miller & Halberstadt, 2005).

In addition to a potential differential impact of media source on drive for thinness and drive for muscularity, it appears that it takes more than mere media exposure to increase body dissatisfaction. That is, some individuals are more susceptible to the harmful impact of media images than are others. Research suggests that media influence is a four-step process: once exposed to media images of the ideal body, to be susceptible to their impact, individuals must internalize and compare their bodies to the ideal image presented in the media, feel societal pressure to achieve the ideal body, and activate the media ideal schema by turning to the very source that activated the schema for information on how to achieve it (López-Guimerà et al., 2010).

Finally, research suggests that there are two media ideals presented to men and women: general/non-athletic ideal and athletic ideals. Collegiate men may be more influenced by athletic images (Karazsia & Crowther, 2008) as men may receive greater societal pressure to be muscular, whereas women might be more influenced by non-athletic images of the ideal body (Stefanile et al., 2011), as women may receive greater societal pressure to be lean and toned (Neighbors & Sobal, 2007).

However, research also indicates that drive for muscularity is becoming an increasing concern among women in the United States (Jacobi & Cash, 1994), and that men in the United States are striving to become not only muscular, but lean (Neighbors & Sobal, 2007). Although much research has been conducted on media's impact on college

women's drive for thinness and men's drive for muscularity, few studies (Jacobi & Cash, 1994) have evaluated media's impact on college women's drive for muscularity and men's drive for thinness. The purpose of this study was to assess different media outlets' - magazines and television – influence on drive for thinness and drive for muscularity in both men and women. Based on our literature reviewed, we hypothesized the following:

1. We hypothesized that drive for thinness in both U.S. collegiate women (Botta, 1999) and men would relate to body comparison to/ internalization of general media images, and that drive for muscularity would correlate with body comparison to athletic images (Karazsia & Crowther, 2008). We also expected that both drive for thinness and drive for muscularity would correlate with societal pressure to have the perfect body (Hargreaves & Tiggemann, 2004), use of media for information on how to meet body ideal schemas (Levine & Smolak, 1996, 2005), magazine consumption (Tiggemann, 2003), and television viewing (Harrison & Cantor, 1997).
2. Magazine consumption will display stronger correlations to drive for thinness and drive for muscularity than will television viewing in both U.S. male and female college students (Miller & Halberstadt, 2005; Tiggemann, 2003).
3. Given the relationship between media exposure and body dissatisfaction is mediated by activation of this schema and body comparison to these media images (Eyal & Te'eni-Harari, 2013), we hypothesized that societal pressure to have the perfect body and activation of ideal body schemas and using media as a source of information would mediate the relation between media exposure (number of magazines read, hours of television watched) and drive for thinness and drive for muscularity in U.S. collegiate women and men.

Method

Participants

A sample size of 311 students in General Psychology classes at a large Western university in the United States enrolled using an on-line software program to take a survey to fulfill a research experience requirement of their General Psychology class. All students over the age of 25 were removed from the database before analysis. This left 264 students comprised of 105 men and 159 women (see Table 1 for demographic information). Men were significantly older than were women. Thus, in all analyses involving both men and women, age will be a covariate. The Institutional Review Board approved all study procedures prior to data collection.

Materials

Media Exposure.

Magazines. Similar to Tiggemann (2003), based on various top 10 read magazines and bestseller lists, a list of the 31 most popular fashion, sports, and entertainment magazines was presented to participants. Participants were asked to designate every magazine they had read, looked through, or bought in the last 4 weeks (it was assumed that purchased magazines were at least looked through if not read thoroughly). We then summed up the number of magazines each participant read. Men and women were presented with identical lists. On average, women read 2.60 magazines the previous month, whereas men read 1.55 magazines the previous month (see Table 2).

Television. Similar to Tiggemann (2003), based on Nielsen television show ratings and primetime television guides, a list of 21 television shows was presented to participants. Participants were asked to designate every television show they had watched in the past 4 weeks. A variety of television shows were listed, including sports shows, sitcoms, dramas, and reality television. Total hours of television watched were calculated by summing the total minutes of each television program participants reported watching. On average, women watched 6.49 hours of television the previous month and men watched 6.67 hours (see Table 2).

Media influence. The 30-item Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ-3) (Thompson, van den Berg, Roehrig, Guarda, & Heinberg, 2004) was utilized to determine body comparison to/internalization of media ideals – both non-athletic and athletic, societal pressure to have the perfect body, and use of media for information on how to meet body ideal schemas. Participants' attitudes towards appearance was calculated based on

a scale of 0 (*never*), 1 (*rarely*), 2 (*sometimes*), 3 (*most of the time*), and 4 (*always*). Items were categorized into one of four subscales and averages were created for each subscale: Societal Pressure to have the perfect body (seven items; e.g., “I’ve felt pressure from TV or magazines to lose weight”; $\alpha = .90$), Body comparison/ Internalization - Athlete (five items; “I compare my body to that of people in ‘good shape’”; $\alpha = .77$), Body comparison/ Internalization - General (nine items; “I compare my body to the bodies of people who are on TV or in magazines”; $\alpha = .85$), and the Activation of the Body Ideal Schema and Use of Media as a Source of Information (nine items; “TV programs are an important source of information about fashion and ‘being attractive’” and “Magazines are an important source of information about fashion and ‘being attractive’”; $\alpha = .83$).

Drive for Muscularity. Drive for muscularity was assessed by the 15-item Drive for Muscularity Scale of McCreary and Sasse (2000). Participant’s drive for muscularity was calculated by responses on a scale of 0 (*never*) to 4 (*always*) to questions such as “I wish that I were more muscular.” Responses were averaged, with a high score indicating greater drive for muscularity ($\alpha = .92$).

Drive for thinness. Participants completed the seven item Drive for Thinness subscale of the multidimensional Eating Disorder Inventory-3 (Garner, 2004; Garner, Olmstead, & Polivy, 1983). Items such as, “I feel extremely guilty after overeating.” and “I exaggerate or magnify the importance of weight.” were responded to on a six-point Likert response scale where 1 = *Always* and 6 = *Never*. Responses were summed, with a low score indicated drive for thinness ($\alpha = .88$).

Procedure

Introductory psychology students were recruited to participate in this study as part of their course credit options. Those who chose to complete the questionnaire were directed to the on-line survey within a secure website. Prior to starting the survey, they were provided with consent information and asked to verify that they were 18 years of age or older and consent to participate in the study. Once they gave consent, participants completed a series of closed-response questions via the secure website. Participants were allowed to skip any questions they did not want to answer. The questionnaire took approximately 30 minutes to complete.

Results

Before testing our hypotheses, we wanted to ascertain whether there were gender differences in our key variables. To this end, we ran a MANOVA using age as a covariate. Results are displayed in Table 2. Women scored significantly higher than men on drive for thinness, body comparison to/ internalization of general/non-athletic media images, societal pressures, and using media as a source of information. Women also read more magazines in the month prior to the study than men. However, men reported higher levels of drive for muscularity. There were no gender differences in number of hours of television watched or in internalization of athletic images.

Relationship between Drive for Muscularity and Drive for Thinness and Media Factors

We first hypothesized that drive for thinness in both women and men would relate to body comparison to/ internalization of general media images, and that drive for muscularity would correlate with body comparison to athletic images. We also hypothesized that both drive for thinness and drive for muscularity would correlate with societal pressure to have the perfect body, use of media for information on how to meet body ideal schemas, magazine consumption, and television viewing. To test this hypothesis, we conducted Pearson’s *r* correlations. As displayed in Table 3, relationships between drive for thinness and all media factors were statistically significant in women. However, as predicted, the correlation between the drive for thinness and internalization of non-athletic images was greater than the correlation between drive for thinness and internalization of athletic images. Similarly, as expected, the correlation between drive for muscularity and body comparison/ internalization of athletic media images was greater than that between drive for muscularity and body comparison to/ internalization of general/non-athletic images. The relationships between drive for muscularity and media factors were also significant for societal pressure to have the perfect body, and television viewing in women. Even fewer relationships reached statistical significance in men. As expected, in men, drive for thinness was significantly correlated with body comparison/ internalization of general media images – but not internalization of athletic images - and societal pressure to have the perfect body. Drive for muscularity was significantly correlated with body comparison/ internalization of both general and athletic media images. As expected, the correlation was greater between drive for muscularity and

internalization of athletic images than between drive for muscularity and internalization of general/ non-athletic images. Drive for muscularity also related to using the media as a source of information on how to obtain the ideal body in men.

Relation between Media Type and Drive for Muscularity and Drive for Thinness

Our second hypothesis, based on research in Australian female college students by Tiggemann (2003) and male and female college students in New Zealand (Miller & Halberstadt, 2005), was that television and magazines would have different influences on men and women's drive for muscularity and drive for thinness. Specifically, we expected stronger correlations between magazine consumption and drive for thinness and drive for muscularity than between television viewing and drive for thinness and drive for muscularity. We had anticipated statistically testing the difference between pairs of correlations using Fisher's *r-to-z* equation. However, in the present study the correlations for men between media exposure (television viewing hours and number of magazines read) and drive for thinness and drive for muscularity were non-significant. In women, correlations between media exposure (television viewing hours and number of magazines read) and drive for thinness were relatively similar (.19 and .22, respectively), but drive for muscularity was only significantly correlated with television viewing hours. Thus, we were unable to properly test this hypothesis.

Mediation Model

Lastly, we hypothesized that societal pressure to have the perfect body and using media as a source of information would mediate the relation between media exposure (number of magazines read, hours of television watched) and drive for thinness and drive for muscularity in women and men. However, as there was no significant relationship between media exposure and drive for thinness or drive for muscularity in men, mediation models could not be tested in men. Similarly, as the relation between drive for muscularity and magazine consumption was non-significant in women, that model could also not be tested. Thus, we tested for possible mediation of societal pressure to have the perfect body and using media as a source of information on the relationship between media exposure (number of magazines read, hours of television watched) and drive for thinness in women. In addition, we tested for possible mediation of societal pressure to have the perfect body and using media as a source of information on the relationship between total television viewing hours and drive for muscularity in women. Using Baron and Kenny's (1986) model for testing mediation, we first examined the relationships between societal pressure to have the perfect body and using media for information and media exposure. As shown in Table 4, both total television viewing hours and total magazines read were significantly related to using media as a source of information in women, but not societal pressure to have the perfect body, $F(2, 155) = 4.75, p < .01, R^2 = .06$, and $F(2, 155) = 8.73, p < .001, R^2 = .10$, respectively. As societal pressure to have the perfect body was not significant in step 1 of the equation, it could not be tested in step 3 (Baron & Kenny, 1986).

In the second step of the equation, media exposure (total television viewing hours and total magazines read) was regressed onto drive for thinness and drive for muscularity in women. As shown in Table 5, total television viewing hours were significantly related to drive for thinness, $F(1, 154) = 5.62, p < .05, R^2 = .04$, and drive for muscularity in women, $F(1, 155) = 8.93, p < .01, R^2 = .06$. Total magazines read were significantly related to drive for thinness, $F(1, 154) = 7.83, p < .01, R^2 = .05$, but not drive for muscularity, $F(1, 155) = 1.42, R^2 = .01$.

As the relationship between drive for muscularity and total magazines was not significant in step two, mediation could not be tested for that path (Baron & Kenny, 1986). In sum, we explored whether using media as a source of information mediated the relation between total magazines read or total television viewing hours and drive for thinness and the relation between total television viewing hours and drive for muscularity in women. As shown in Table 5, the model testing drive for thinness indicated mediation, as total television viewing hours and total magazine consumption fell to non-significance when using media as a source of information was entered into the equation, $F(3, 151) = 10.09, p < .001, R^2 = .17$. However, the model testing drive for muscularity did not indicate mediation, as total television viewing hours remained significant when using media as a source of information was entered into the equation, $F(2, 153) = 4.74, p < .01, R^2 = .06$.

Discussion

We hypothesized that drive for thinness in both women (Botta, 1999; Stefanile et al., 2011) and men would relate to body comparison to/ internalization of general media images, and that drive for muscularity would correlate with body comparison to athletic images (Karazsia & Crowther, 2008). We also hypothesized that both drive for thinness and drive for muscularity would correlate with societal pressure to have the perfect body (Hargreaves & Tiggemann, 2004), use of media for information on how to meet body ideal schemas (Levine & Smolak, 1996, 2005), magazine consumption (Tiggemann, 2003), and television viewing (Harrison & Cantor, 1997). Our hypotheses were partially supported. As predicted, the correlation between the drive for thinness and internalization of non-athletic images was greater than the correlation between drive for thinness and internalization of athletic images in women (Stefanile et al., 2011). Similarly, as expected based on research with U.S. collegiate men (Karazsia & Crowther, 2008), the correlation between drive for muscularity and body comparison/ internalization of athletic media images was greater than that between drive for muscularity and body comparison to/ internalization of general/non-athletic images in women. In addition, relationships between drive for thinness and societal pressure, hours spent watching television, number of magazines read, and use of media as a source of information to meet body ideals were statistically significant in women. Interestingly, drive for muscularity correlated with amount of time spent watching television and societal pressure, but not number of magazines read or use of media as a source of information. The lack of relationships may be explained by the fact that U.S. college women are more cognizant about their weight than their level of muscularity (Neighbors & Sobal, 2007) and thus, media may play less of a role in their levels of drive for muscularity.

As hypothesized, drive for thinness was significantly correlated with body comparison/ internalization of general media images – but not internalization of athletic images – in men. Drive for thinness also related to societal pressure to have the perfect body. As expected, the correlation between drive for muscularity and internalization of athletic images was greater than the relation between drive for muscularity and internalization of general/ non-athletic images (Karazsia & Crowther, 2008). Drive for muscularity in men also related to using the media as a source of information on how to obtain the ideal body.

The more interesting fact was the lack of a significant relationship between drive for muscularity in men and societal pressure to have the perfect body. This was unexpected since drive for muscularity was significantly correlated with body comparison/ internalization of both general and athletic media images and using the media as a source of information on how to obtain the ideal body. Previous research indicates a relationship between societal pressure to have the perfect body and internalization of/body comparison to general media ideals in male college students in the U.K. (Giles & Close, 2008; Hargreaves & Tiggemann, 2004). This finding underscores the impact media and societal pressure to possess the perfect body have on men's body comparison/ internalization of general media images. Future research may wish to further examine what, besides media susceptibility and body comparison/ internalization of general media images, drives men's desire to become more muscular.

Second, we hypothesized that television and magazines would have different influences on men's and women's drive for muscularity and drive for thinness, with magazines displaying a stronger relationship (Tiggemann, 2003). This hypothesis was not supported in the present study. This finding is particularly curious for men as previous researchers have found that college men exposed to ideal male images in television advertisements in the United States displayed increased muscle dissatisfaction and a decrease in body esteem (Agliata & Tantleff-Dunn, 2004; Hobza & Rochlen, 2009). However, other researchers have found that television advertisements featuring the muscular-ideal had little influence on boys' body image and did not cause an increase in body dissatisfaction (Hargreaves & Tiggemann, 2004). Research in this area is contradictory but it does seem that image-focused media may relate to men's drive for muscularity and body dissatisfaction. In fact, U.S. (Hatoum & Belle, 2004) and Canadian college men (Morry & Staska, 2001) who read more magazines reported higher levels of the drive for muscularity and more eating problems. U.S. college men who read more magazines also report taking more dietary supplements to increase muscle mass and exercising more than do U.S. college men who read few magazines (Hatoum & Belle, 2004). Overall, it does seem odd that our study did not coincide with the idea that the more men are exposed to media ideals, the higher their drive for muscularity. However, we did not account for the type of magazines read. It is likely that *GQ* would have a stronger relationship to drive for muscularity than a travel magazine. Future studies should analysis type of magazine as a factor in the relation between magazine consumption and drive for muscularity in men.

It is even more peculiar that magazines did not display a stronger relationship to drive for thinness in women. For women, magazines often promote thinness and body tone. Articles and ads associate attractiveness with body shape and weight by featuring models below the average weight, endorsing dieting products, and instructing readers on how to become, and stay, thin and toned (Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999; Vaughan & Fouts, 2003). The content in these magazines is harmful to women, as a study of U.S. female high school students revealed that a one-time 30-minute exposure to magazine ads can negatively affect young women's body-size perceptions (Botta, 1999). According to a review article, this effect is evident in Western anorexic women who report frequently engaging in media use and cite their media dependency as a result of their eating disorder lifestyle (Spettigue & Henderson, 2004). In addition, U.S. female high school and college students who read more health and fitness magazines show an increase in bulimic behaviors, an increase in anorexic behaviors, and an increased drive to be thin (Botta, 2003). Similarly, female high school and college students who read sports magazines show a greater increase in drive for muscularity (Botta, 2003). Future studies should examine if societal pressure to have the perfect body is more powerful than media in the body comparison/ internalization of athletic media images and drive for thinness and drive for muscularity in women. In addition, whereas many previous studies only examined fashion magazines, the present study included all magazine types. Future studies should also examine whether the type of magazine read (e.g., *Cosmo* v. *Oprah*) impacts drive for thinness in women.

Finally, we hypothesized that societal pressure to have the perfect body and using media as a source of information would mediate the relation between media exposure (number of magazines read, hours of television watched) and drive for thinness and drive for muscularity in women and men. As there was no significant relationship between media exposure and drive for thinness or drive for muscularity in men, mediation models could not be tested in men. We did find that using media as a source of information mediated the relationship between media exposure and drive for thinness in women, but not drive for muscularity. This mediation is congruent with previous research that suggests U.S. adolescent females' dieting behaviors (which often relate to drive for thinness) are influenced by the use of media for information about thinness and beauty (Rubio-Kuhnert, 1999).

Limitations

Limitations of our study must be considered when discussing our findings. First, the study was conducted on college students in the United States. Future studies may wish to examine these relationships in different countries and in different age groups. Second, to test drive for muscularity in women, future researchers may wish to alter the scale to assess women's desire to be tone rather than muscular (Kyrejto, Mosewich, Kowalski, Mack, & Crocker, 2008). Third, only television and magazine consumption were assessed. Clearly, social media and internet consumption may affect drive for muscularity and drive for thinness. Future studies should examine the impact of other types of media. Fourth, there was a range of responses on number of magazines read and number of hours of television watched, with some participants not reading magazines or watching television. While these participants responses were kept in for data analysis purposes as we wanted the full response set, it would be interesting to see how the results differed when excluding those participants who limit their media consumption. Finally, there are clearly other variables that relate to drive for thinness and drive for muscularity besides media factors (Pritchard, 2008). Future studies should examine other factors as potential mediators of the relationships between media exposure and drive for thinness and drive for muscularity. For example, peer or family influences might be more powerful predictors of drive for thinness and drive for muscularity than media factors.

Conclusion

The present study suggests that media factors do relate to women's and men's drive for thinness and drive for muscularity. In particular, using media as a source of information on how to attain the ideal body mediates the relationship between drive for thinness and media exposure in women. This furthers the evidence that media may relate to the drive for thinness and drive for muscularity of both men and women and demonstrates that drive for thinness is not particular to women and drive for muscularity is not specific to men. The knowledge gained through the present study may be applicable beyond the United States and beyond the college student population, as the drive for thinness and drive for muscularity are appearing in countries adopting Western media. Overall, it seems that media and the internalization of general/ non-athletic body ideals may have an impact on drive for thinness in both men and women. Similarly, internalization of athletic body ideals may relate to drive for muscularity in both

collegiate men and women in the U.S. By understanding media's influence on drive for thinness and drive for muscularity clinicians can create more effective treatment programs for drive for thinness and drive for muscularity, body dysmorphia, and eating disorders.

References

- Agliata, D., & Tantleff-Dunn, S. (2004). The impact of media exposure in males' body image. *Journal of Social and Clinical Psychology, 23*, 7-22. doi:10.1521/jscp.23.1.7.26988
- Ambwani, S., & Chmielewski, J. F. (2013). Weighing the evidence: Social desirability, eating disorder symptomatology, and accuracy of self-reported body weight among men and women. *Sex Roles, 68*, 474-483. doi:10.1007/s11199-012-0244-1
- Anschutz, D. J., Engels, R. C. M. E., & Van Strien, T. (2008). Susceptibility for thin ideal media and eating styles. *Body Image, 5*, 70-79. doi: 10.1016/j.bodyim.2007.06.008
- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*, 1173-1182. doi: 10.1037/0022-3514.51.6.1173
- Botta, R. A. (1999). Television images and adolescent girls' body image disturbance. *Journal of Communication, 49*, 22-41. doi:10.1111/j.1460-2466.1999.tb02791.x
- Botta, R. A. (2003). For your health? The relationship between magazine reading and adolescents' body image and eating disturbances. *Sex Roles, 48*, 389-399. doi:10.1023/A:1023570326812
- Chen, H., & Jackson, T. (2012). Gender and age group differences in mass media and interpersonal influences on body dissatisfaction among chinese adolescents. *Sex Roles, 66*, 3-20. doi: 10.1007/s11199-011-0056-8
- Choi, P. Y. L. (2000). *Femininity and the physically active woman*. Hoboken: Routledge.
- Daniel, S., & Bridges, S. K. (2010). The drive for muscularity in men: Media influences and objectification theory. *Body Image, 7*, 32-38. doi:10.1016/j.bodyim.2009.08.003
- Daniels, E. A. (2012). Sexy versus strong: What girls and women think of female athletes. *Journal of Applied Developmental Psychology, 33*, 79-90. doi: 10.1016/j.appdev.2011.12.002
- Eyal, K., & Te'eni-Harari, T. (2013). Explaining the relationship between media exposure and early adolescents' body image perceptions: The role of favorite characters. *Journal of Media Psychology: Theories, Methods, and Applications, 25*, 129-141. doi:10.1027/1864-1105/a000094
- Fernandez, S., & Pritchard, M. (2012). Relationships between self-esteem, media influence and drive for thinness. *Eating Behaviors, 13*, 321-325. doi: 10.1016/j.eatbeh.2012.05.004
- Festinger, L. (1954). A theory of social comparison processes. *Human Relations Human Relations, 7*, 117-140. doi:10.1177/001872675400700202
- Garner, D. M. (2004). *Eating Disorder Inventory-3. Professional Manual*. Lutz, FL: Psychological Assessment Resources, Inc.
- Garner, D. M., Olmstead, M. P., & Polivy, J. (1983). Development and validation of a multidimensional eating disorder inventory for anorexia nervosa and bulimia. *International Journal of Eating Disorders, 2*, 15-34. doi:10.1002/1098-108X(198321)2:2%3C15::AID-EAT2260020203%3E3.0.CO;2-6
- Giles, D. C., & Close, J. (2008). Exposure to 'lad magazines' and drive for muscularity in dating and non-dating young men. *Personality and Individual Differences, 44*, 1610-1616. doi: 10.1016/j.paid.2008.01.023
- Grabe, S., Ward, L., & Hyde, J. (2008). The role of the media in body image concerns among women: A meta-analysis of experimental and correlational studies. *Psychological Bulletin, 134*, 460-476. doi:10.1037/0033-2909.134.3.460
- Hargreaves, D. A., & Tiggemann, M. (2004). Idealized media images and adolescent body image: 'Comparing' boys and girls. *Body Image, 1*, 351-361. doi: 10.1016/j.bodyim.2004.10.002
- Harrison, K., & Cantor, J. (1997). The relationship between media consumption and eating disorders. *Journal of Communication, 47*, 40-67. doi: 10.1111/j.1460-2466.1997.tb02692.x
- Hatoum, I. J., & Belle, D. (2004). Mags and abs: Media consumption and bodily concerns in men. *Sex Roles, 51*, 397-407. doi: 10.1023/b:sers.0000049229.93256.48
- Hawkins, N., Richards, P. S., Granley, H. M., & Stein, D. M. (2004). The impact of exposure to the thin-ideal media image on women. *Eating Disorders: The Journal of Treatment & Prevention, 12*(1), 35-50. doi: 10.1080/10640260490267751
- Hobza, C. L., & Rochlen, A. B. (2009). Gender role conflict, drive for muscularity, and the impact of ideal media portrayals on men. *Psychology of Men and Masculinity, 10*, 120-130. doi:10.1037/a0015040

- Jacobi, L., & Cash, T. F. (1994). In pursuit of the perfect appearance: Discrepancies among self-ideal percepts of multiple physical attributes. *Journal of Applied Social Psychology*, 24, 379-396. doi: 10.1111/j.1559-1816.1994.tb00588.x
- Karazsia, B. T., & Crowther, J. H. (2008). Psychological and behavioral correlates of the sataq-3 with males. *Body Image*, 5, 109-115. doi:10.1016/j.bodyim.2007.08.004
- Kyrejto, J. W., Mosewich, A. D., Kowalski, K. C., Mack, D. E., & Crocker, P. R. E. (2008). Men's and women's drive for muscularity: Gender differences and cognitive and behavioral correlates. *International Journal of Sport & Exercise Psychology*, 6, 69-84. doi:10.1080/1612197X.2008.9671855
- Levine, M. P., & Murnen, S. K. (2009). 'Everybody knows that mass media are/are not [pick one] a cause of eating disorders': A critical review of evidence for a causal link between media, negative body image, and disordered eating in females. *Journal of Social and Clinical Psychology*, 28, 9-42. doi:10.1521/jscp.2009.28.1.9.
- Levine, M. P., & Smolak, L. (1996). Media as a context for the development of disordered eating. In L. Smolak, M. P. Levine & R. Striegel-Moore (Eds.), *The developmental psychopathology of eating disorders: Implications for research, prevention, and treatment*. (pp. 235-257). Hillsdale, NJ England: Lawrence Erlbaum Associates, Inc.
- Levine, M. P., & Smolak, L. (2005). *The prevention of eating problems and eating disorders : Theory, research, and practice*. Mahwah, N.J.: Lawrence Erlbaum Associates.
- López-Guimerà, G., Levine, M. P., Sánchez-Carracedo, D., & Fauquet, J. (2010). Influence of mass media on body image and eating disordered attitudes and behaviors in females: A review of effects and processes. *Media Psychology*, 13(4), 387-416. doi: 10.1080/15213269.2010.525737
- Lowry, R., Wechsler, H., Galuska, D., Fulton, J., & Kann, L. (2002). Television viewing and its associations with overweight, sedentary lifestyle, and insufficient consumption of fruits and vegetables among US high school students: differences by race, ethnicity, and gender. *Journal of School Health*, 72, 413-421. doi:10.1111/j.1746-1561.2002.tb03551.x
- Markula, P. (1995). Firm but shapely, fit but sexy, strong but thin: The postmodern aerobicizing female bodies. *Sociology of Sport Journal*, 12, 424-453.
- McCreary, D. R., & Sasse, D. K. (2000). An exploration of the drive for muscularity in adolescent boys and girls. *Journal of American College Health*, 48, 297-304. doi: 10.1080/07448480009596271
- Miller, E., & Halberstadt, J. (2005). Media consumption, body image and thin ideals in New Zealand men and women. *New Zealand Journal of Psychology*, 34, 189-195.
- Morry, M. M., & Staska, S. L. (2001). Magazine exposure: Internalization, self-objectification, eating attitudes, and body satisfaction in male and female university students. *Canadian Journal of Behavioural Science/Revue canadienne des sciences du comportement*, 33, 269-279. doi: 10.1037/h0087148
- Neighbors, L. A., & Sobal, J. (2007). Prevalence and magnitude of body weight and shape dissatisfaction among university students. *Eating Behaviors*, 8, 429-439. doi: 10.1016/j.eatbeh.2007.03.003
- Panek, E. (2014). Left to their own devices: College students' "guilty pleasure" media use and time management. *Communication Research Communication Research*, 41, 561-577. doi:10.1177/0093650213499657
- Peterson, K. A., Paulson, S. E., & Williams, K. K. (2007). Relations of eating disorder symptomology with perceptions of pressures from mother, peers, and media in adolescent girls and boys. *Sex Roles*, 56, 629-639. doi:10.1007/s11199-007-9296-z
- Pritchard, M. E. (2008). Diet is a four-letter word: What can be done about America's unhealthy obsession with weight? In A. B. Turley & G. C. Hofmann (Eds.), *Life style and health research progress*. (pp. 183-207). Hauppauge, NY US: Nova Biomedical Books.
- Rubio-Kuhnert, M. (1999, July). Body dissatisfaction and dieting behaviors among children: A sociocultural perspective. *Dissertation Abstracts International*, 60 (1-B), 374.
- Spettigue, W., & Henderson, K. A. (2004). Eating disorders and the role of the media. *The Canadian Child and Adolescent Psychiatry Review*, 13, 16-19.
- Stefanile, C., Matera, C., Nerini, A., & Pisani, E. (2011). Validation of an Italian version of the sociocultural attitudes towards appearance questionnaire-3 (sataq-3) on adolescent girls. *Body Image*, 8, 432-436. doi:10.1016/j.bodyim.2011.06.001
- Stevens, L., Maclaran, P., & Catterall, M. (2007). A space of one's own: Women's magazine consumption within family life. *Journal of Consumer Behaviour*, 6, 236-252. doi:10.1002/cb.219
- Thompson, J., & Stice, E. (2001). Thin-ideal internalization: Mounting evidence for a new risk factor for body-image disturbance and eating pathology. *Current Directions In Psychological Science*, 10, 181-183. doi:10.1111/1467-8721.00144.

- Thompson, J., Heinberg, L. J., Altabe, M., & Tantleff-Dunn, S. (1999). *Exacting beauty: Theory, assessment, and treatment of body image disturbance*. Washington, DC: American Psychological Association.
- Thompson, J. K., van den Berg, P., Roehrig, M., Guarda, A. S., & Heinberg, L. J. (2004). The sociocultural attitudes towards appearance scale-3 (SATAQ-3): Development and validation. *International Journal of Eating Disorders*, 35(3), 293-304. doi:10.1002/eat.10257
- Tiggemann, M. (2003). Media exposure, body dissatisfaction, and disordered eating: Television and magazines are not the same. *European Eating Disorders Review*, 11, 418-430. doi: 10.1002/erv.502
- Tiggemann, M. (2005). Television and adolescent body image: The role of program content and viewing motivation. *Journal of Social and Clinical Psychology*, 24, 361-381. doi:10.1521/jscp.24.3.361.65623
- Tiggemann, M. (2011). Sociocultural perspectives on human appearance and body image. In T. F. Cash, L. Smolak (Eds.), *Body image: A handbook of science, practice, and prevention (2nd ed., pp. 12-19)*. New York, NY US: Guilford Press.
- Tiggemann, M., & Pickering, A. S. (1996). Role of television in adolescent women's body dissatisfaction and drive for thinness. *International Journal of Eating Disorders*, 20, 199-203. doi:10.1002/(SICI)1098-108X(199609)20:2<199::AID-EAT11>3.0.CO;2-Z
- Vaughan, K. K., & Fouts, G. T. (2003). Changes in television and magazine exposure and eating disorder symptomatology. *Sex Roles*, 49, 313-320. doi: 10.1023/a:1025103902708

Table 1

Demographic characteristics of study participants

	Female	Male	<i>t</i> (262)
Age	19.14 (1.69)	19.95 (1.99)	3.57***
Race			
Caucasian	136 (85.5%)	87 (82.9%)	
African-American	2 (1.3%)	5 (4.0%)	
Asian	5 (3.1%)	3 (2.9%)	
Pacific Islander	2 (1.3%)	2 (1.9%)	
Native American	2 (1.3%)	0 (0.0%)	
Other	12 (7.5%)	8 (7.6%)	

Note:

*** $p < .001$

Table 2

Gender Differences in Key Variables (Means and Standard Deviations)

	Women	Men	<i>F</i> (1, 245)
DFT	6.79 (5.96)	3.05 (3.87)	28.16***
DFM	2.39 (.94)	3.54 (1.07)	78.92***
Internalization- General	3.05 (.87)	2.50 (.75)	22.20***
Internalization- Athlete	3.31 (.94)	3.25 (.95)	.06
Societal Pressure	3.24 (1.05)	2.17 (.84)	67.19***
Information	2.60 (.82)	2.20 (.72)	10.91***
Total Hours TV	6.49 (4.37)	6.67 (3.43)	.46
<u>Total Magazines</u>	<u>2.60 (2.84)</u>	<u>1.55 (2.04)</u>	<u>8.61**</u>

Note: DFT=Drive for thinness; DFM=Drive for Muscularity; Information=Using media as a course of information.

***p*<.01

****p*<.001

Table 3

Correlations between Key Variables

	1	2	3	4	5	6	7	8
1. DFT	--	.17*	.54***	.42***	.55***	.39***	.19*	.22**
2. DFM	.06	--	.21**	.32***	.19*	.13	.23**	.10
3. Internalization-General	.20*	.29**	--	.61***	.74***	.61***	.22**	.30***
4. Internalization-Athlete	-.06	.45***	.58***	--	.52***	.43***	.28***	.25**
5. Societal Pressure	.33***	.16	.52***	.32***	--	.38***	.11	.22**
6. Information	.05	.27**	.43***	.38***	.29**	--	.24**	.29***
7. Total TV hours	-.06	.17	.02	.15	.01	.28**	--	.46***
8. Total magazines	.03	.16	.11	.16	.09	.24*	.38***	--

Note: DFT=Drive for thinness; DFM=Drive for Muscularity; Information=Using media as a source of information on how to achieve the ideal body. Correlations above the diagonal represent women; correlations below the diagonal represent men.

* $p < .05$

** $p < .01$

*** $p < .001$

Table 4

Mediation of Social Pressure and Using Media as a Source of Information on the Relation Between Media Exposure and Drive for Thinness and Drive for Muscularity in Women Step 1

Variable	<i>B</i>	<i>SE</i>	β	<i>t</i>
Total Television Viewing Hours				
Information	1.24	.45	.23	2.76**
Social Pressure	.09	.35	.02	.25
Total Magazines Read				
Information	.85	.29	.25	2.98**
Social Pressure	.36	.22	.13	1.59

Note: Information=Using media as a course of information.

** $p < .01$

Table 5

Mediation of Media Exposure on the Relation Between Using Media as a Source of Information and Drive for Thinness and Drive for Muscularity in Women

Variable	Drive for Thinness						Drive for Muscularity					
	<i>B</i>	<i>SE</i>	β	<i>t</i>	tol	VIF	<i>B</i>	<i>SE</i>	β	<i>t</i>	tol	VIF
<i>Step 2</i>												
Total TV	.26	.11	.19	2.37*			.05	.02	.23	2.99**		
Total magazines	.47	.17	.22	2.80**			.03	.03	.10	1.19		
<i>Step 3</i>												
Total TV	.09	.12	.06	.74	.78	1.28	.05	.02	.21	2.62**	.94	1.07
Total magazines	.21	.18	.10	1.14	.75	1.32						
<u>Information</u>	2.53	.57	.35	4.43***	.91	1.10	.08	.09	.07	.89	.94	1.07

Note: Note: Information=Using media as a course of information; * $p < .05$, ** $p < .01$, *** $p < .001$