

# #gotmuscles? Instagram and Body Image in College Men

**Lauren R. Paulson**

Allegheny College, Meadville, PA, 16362  
814-332-6029, lpaulson@allegheny.edu

The exploratory study investigated the immediate effect of exposure of ideal male bodies on Instagram on state body satisfaction, drive for muscularity, and body comparison in male college students. Male college students were exposed to real Instagram accounts that included either images of the male mesomorphic ideal or neutral images. State Body Satisfaction was measured before and immediately after using computer based visual analogue scales. After exposure, participants completed social comparison and drive for muscularity measures. Exposure to muscular-ideal images on Instagram led

to lower appearance satisfaction, weight satisfaction, and more social comparison compared to the neutral images. The novel and interesting findings from this study provide preliminary evidence for the negative role of social media images, specifically via Instagram, on men's body image and social comparison.

*Keywords: Social media, Instagram, male body image, drive for muscularity, male body satisfaction, objectification*

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**B**ody image is a multidimensional construct (Dorian & Garfinkel, 2002), reflecting a person's level of satisfaction with the way they look or feel about their body and this perception can influence one's thoughts, feelings, and behaviors about the self, both positive and negative (Cash, 2000). Research examining men's body image indicate that male body dissatisfaction has increased over the past few decades (Cash, Morrow, Hrabosky, & Perry, 2004; Gray & Ginsberg, 2007; Karazsia, Murnen, & Tylka, 2017; Manago, Ward, Lemm, Reed, & Seabrook, 2015; Stefanone, Lackaff, & Rosen, 2011; Tantleff-Dunn, Barnes, & Larose, 2011) with one study reporting that male body dissatisfaction is thought to be comparable to women (Frederick, et al., 2007). Some argue that as women have been become vulnerable to the culture of thinness, males have become vulnerable to the culture of muscularity (Agliata & Tantleff-Dunn, 2004; Heinberg, 1996). As a result, previous gender comparisons related to body dissatisfaction is considered limited, because the way body image is manifested, and therefore measured, is different and heavily influenced by gender (Karazsia, Murnen, &

Tylka, 2017). It is recommended that an inclusive definition of body image among males now include a drive for muscularity (Bergeron & Tylka, 2007). Therefore, when measures of muscularity are included in body image research, men may express higher levels of body dissatisfaction.

Over time, the ideal male body, often referred to as the mesomorph ideal, has become increasingly more and more lean and muscular. This ideal includes broad shoulders, a muscular chest, and narrow waistline (Labre, 2005b; Olivardia, Pope, Borowiecki & Cohane, 2004; Pope, Phillips, & Olivardia, 2000). Men are experiencing greater societal pressure to obtain this ideal through exposure to muscular male bodies from multiple sources (Blond, 2008; Daniel & Bridges, 2013; Davison & McCabe, 2005; Thompson & Cafri, 2007; Tiggemann, 2011). It has been argued that the male body is a “tool that men, on various levels of consciousness, manipulate in order to achieve a gendered identity” (Rohlinger, 2002, p. 62). Therefore, men’s body image might be more focused on functionality or muscularity (Grogan & Richards, 2002), compared to women’s body image that tends to be looked at and judged more harshly. Research suggests that men are becoming increasingly invested in their body image (Cash et al., 2004) and dissatisfied with their bodies (Adams, Turner, & Bucks, 2005; Pope, Gruber, et al., 2000) with estimates of 43%- 95% of men reporting dissatisfaction with their body or specific body parts (Daniel & Bridges, 2013; Schooler & Ward, 2006) and as many as 90% of undergraduate men reporting the desire to be more muscular (Frederick et al., 2007). College-aged males, on average, perceived the ideal male as having 25 pounds more muscle mass than they believed themselves to have (Olivardia et al., 2004). In fact, some have argued that normative discontent, or widespread body dissatisfaction, has now become a stereotype for men (of all sexual orientations), something that was thought to apply only to women (Tantleff-Dunn, Barnes, & Larose, 2001). This feeling of discontent and low body-esteem can lead to disordered eating, excessive exercise, and other unhealthy behaviors and negative psychological outcomes (Cafri et al., 2005; Pope, Phillips, & Olivardia, 2000; Thompson, & Cafri, 2007). In order to achieve the increasingly unattainable ideal, men may take part in muscularity-oriented behaviors, including the consumption of protein and energy supplements and excessive weight training and exercise (Pope, Gruber, Choi, Olivardia, & Phillips, 1997; Tylka, 2011) with

some turning to anabolic steroid use as an attempt to alleviate body dissatisfaction and increase physical size and attractiveness (Irving, Wall, Neumark-Sztainer, & Story, 2002; Karazsia, Murnen, & Tylka, 2017). The illicit use of anabolic steroids is considered a major public health issue in the United States (CDC, 2008) especially among those who have body image concerns. The aforementioned findings highlight the importance of studying the gendered nature of body dissatisfaction in men. Past research has evaluated how traditional media perpetuates the male ideal, and suggests that after exposure to attractive muscular men, body dissatisfaction increases in males (Blond, 2008). Although recent research has shifted to include how Facebook affects the lives of female users (Tiggemann & Slater, 2013), this area of studying social media platforms is relatively new (Holland & Tiggemann, 2016) and adult males have been essentially ignored.

### **Sociocultural Pressures and Body Image**

The pressures to meet the muscular ideal can come from multiple sources such as parents, partners, peers, and the media (McCabe & Ricciardelli, 2004). However, mass media is considered the most pervasive and influential in contributing to body dissatisfaction (Tiggemann, 2011). The relationship between exposure to the male ideal and increased body dissatisfaction can be explained through Sociocultural Theory (Morrison, Morrison, & Hopkins, 2003), Social Comparison Theory (Festinger, 1954) and Objectification Theory (Fredrickson & Roberts, 1997). The premise is that we learn societal standards of beauty, that these standards are overly emphasized, and humans tend to compare themselves to others, especially when objective standards are missing. This comparison is then used to determine self-worth and where one stands in various aspects of life. In other words, men may routinely compare their bodies with images of the male ideal that is promoted in the media. It is important to note that compared to women, the ideal body standard for men is not as clearly defined in the media and that men are presented with more varied and flexible types of bodies (Boute, Wilson, Strahan, Gazzola, & Papps, 2011). What is clear is that the images presented in men's magazines and of male action figures have become increasingly muscular over several decades (Law & Labre, 2002) and males are exposed to these ideals several times a day, through multiple mediums, and these images are virtually unavoidable (Boute, Wilson, Strahan, Gazzola, & Papps, 2011). When men compare themselves to the muscular ideal and perceive a

discrepancy between their actual body, this discrepancy may lead men to become dissatisfied with their own bodies (Keery, van den Berg, & Thompson, 2004; van den Berg, Thompson, Obremski-Brandon, & Coovert, 2002; Vartanian & Dey, 2013) and become at-risk of developing the clinical disorder of muscle-dysmorphia (Parent & Moradi, 2011). Social comparisons made by males tends to center around muscularity (Gokee-Larose, Dunn, & Tantleff-Dunn, 2004; Hargreaves & Tiggemann, 2004) and the drive for muscularity can become an internalized social pressure (Karazsia, Murnen, & Tylka, 2017). This social comparison can be downward, lateral, and upward, with upward being more important in regards to physical appearance composition (Wheeler & Miyake, 1992). Research has supported the link between sociocultural influences on body satisfaction; however, the majority of this research has focused on adult women and adolescent girls (Keery et al., 2004; Vartanian & Dey, 2013). Previous research, though mixed, provides support that increased consumption of media through fitness magazines and television is linked to increased body dissatisfaction in males (Botta, 2003; Labre, 2005a; Morry & Staska, 2001).

In a research review, Blond (2008) found that, in general, media exposure to idealized images can negatively influence male body satisfaction. Westernized advertisements have become increasingly sexualized and objectifying of men, something that used to be applied just to women (Rohlinger, 2002) and until recently most research has focused on traditional forms of media, such as television, magazines, and movies (Brown & Tiggemann, 2016; Myers & Crowther, 2009). Objectification theory (Fredrickson & Roberts, 1997) posits that bodies, or body parts, are to be looked at and people are judged solely on appearances. Therefore, men can internalize the cultural standards of attractiveness and the *observer perspective* and, thus engage in a form of self-objectification and body comparison. In other words, men can feel a sense of shame and increased body surveillance when viewing ideal images and this can contribute to depression, body dissatisfaction, drive for muscularity, and low self-esteem (Daniel & Bridges, 2010). In summary, sociocultural theory, social comparison, and objectification theories are all thought to be underlying processes contributing to body dissatisfaction in males. As more and more men are prioritizing their appearance, they may be engaging in further body surveillance activities and experiencing body shame.

It is important to delineate and study the different forms of media and their varied influences on body image. An important distinction between traditional media and social media is the amount of control and engagement that an individual has on what they are viewing. Traditional media largely consists of marketing and advertising. This is something that people are exposed to everyday, more or less unwillingly, such as television commercials or pop-up computer ads. Traditional media, however, is rapidly losing popularity. Social media platforms, such as Instagram, Snapchat, and Facebook, are more controlled by the individuals that are using them. In other words, social media sites use algorithms that are based off of individual preferences, the pages they visit, the longer they stay on a post or page, and the photos they “like.” Furthermore, a person could easily seek out and expose themselves to different images or ads that are specific to their interests, such as gaining muscle or eating and exercising in unhealthy ways. Social media may have a more powerful influence on body image than traditional media because of the freedom, engagement, and flexibility that are offered by these sites (Andsager, 2014). This could be more dangerous to those who are at-risk of engaging in disordered behaviors.

The use of social media has grown considerably, particularly in younger demographics with an estimated 90% of 18-29 year-olds using social networking sites in the United States (Pew Research, 2018). Previous research has established a link between Facebook usage and body dissatisfaction, disordered eating, and internalization of the thin-ideal in teens and women (Fardouly & Vartania, 2015; Meier & Gray, 2014; Tiggemann & Miller, 2010; Tiggemann & Slater, 2013, 2014) and body dissatisfaction in both men and women on Facebook while viewing attractive profiles (Haferkamp & Krämer, 2011); however, few published studies have experimentally investigated the impact of Instagram (Tiggemann & Zaccardo, 2015), and no published studies have examined the impact of Instagram exposure on men. The status of traditional media has been taken over by the popularity and availability of more interactive, engaging, and photo-centric social media sites, such as Instagram (Bell & Dittmar, 2011; Tiggemann & Miller, 2010).

Instagram is one of the most popular social media platforms, bringing together one billion monthly active users (Constine, 2018). Instagram is a unique platform because it is

designed purely for sharing and posting photos, allowing users to provide hashtags, or keywords, which make it easy to search for specific themes. This photo-centric application and resulting photo activity (posting and viewing pictures) has been linked to body-image concerns in women (Meier & Gray, 2014). Unlike Facebook, which includes a combination of pictures, videos, links to articles, text, and advertisements, Instagram relies solely on photographs in a society that is becoming more and more reliant on visual stimuli.

Relevant to the current study is that males tend to find visual material, such as photographs, more evocative than females (Barthel, 1992). It has also been found that it is not the amount of time spent on social media platforms that has been linked to body image concerns, but the amount of time engaging in photo activity (Meier & Gray, 2014). In addition, Instagram allows people to curate and customize their profiles and users can edit or enhance their photos (through filters and digital enhancements) prior to posting on-line. Therefore, users can post their best selves to which others can compare themselves. In today's connected world, young adults are exposed to a constant stream of curated lives and enhanced pictures every time they pick up their phone. In fact, some argue that social comparison may be more salient when using social media sites because the speed and accessibility of viewing others in which to compare is greater on sites like Instagram (Tiggemann & Miller, 2010). Recent research supports the link between Facebook usage and increased social comparisons in women (Haferkamp, Eimler, Papadakis, & Kruck, 2012).

Instagram provides a medium for men to engage in multiple appearance-related social comparisons, and can therefore potentially contribute to body image concerns. In fact, some argue that Instagram is inherently "self-objectifying" (Tiggemann & Zaccardo, 2015, p. 63) and the use of newer media may foster an external perspective of the self, more so than traditional media (Manago et al., 2015). A final unique aspect of Instagram is the interactive features where users can "like" and comment on others' photos, therefore making the exposure more active than traditional media.

### **The Current Study**

The rise in social media usage over the past few years has been dramatic and there have been no published studies investigating the impact of Instagram on body image, drive for muscularity, and state comparisons in college-aged men. Therefore, it has been

recommended that research investigate the impact of exposure of idealized images on men's body satisfaction (Blond, 2008; Holland & Tiggemann, 2016) and to look at the immediate impact on male's state body dissatisfaction (Cash, Fleming, Alindogan, Steadman, & Whitehead, 2002). The purpose of this exploratory study was to investigate the immediate effect of exposure of ideal male body images on Instagram on state body satisfaction, drive for muscularity, and social comparison in college-aged males. This study is important because college-aged males are thought to be at greater risk of body image concerns surrounding muscularity than other age groups (Olivardia, Pope, & Hudson, 2000). The relationship between social media and body image is complex and further experimental research is needed on the effects of this media format (Perloff, 2014). It was expected that men exposed to the ideal male body via Instagram would experience lower state body satisfaction, higher levels for drive for muscularity, weight dissatisfaction, and feelings of self-consciousness and more social comparison, compared to the neutral group.

## **METHODS**

### **Development of stimulus materials**

The stimulus materials were similar to those used in previous research (Leit, Gray, & Pope, 2002; Tiggemann & Zaccardo, 2015). Instagram accounts were created and accounts to be followed were selected by the principal investigator and three research assistants. The feeds, which included images of men with objectifying features (large chest, washboard abs, or pictures of a particular body part), were then pilot tested and rated by 10 college-aged men and women on whether they were perceived as meeting the predefined mesomorph ideal and/or neutral images. The top accounts with the highest scores were chosen for the manipulation. The mesomorph ideal condition followed 12 real Instagram accounts that strictly posted pictures of muscular men working out or posing for pictures. The feeds did not include celebrities or athletes and did not contain any food or marketing material.



*Figure 1.* Example photograph of the muscular ideal social media post. Joe [username]. (2020, January). Get to a level mentally and physically that you feel so comfortable thats bigger than a like on social media because even when they not liking they looking. [#goals](#). {Instagram photo}. Retrieved from <https://www.instagram.com> and photo has been modified to blur the individual's face.

The neutral account followed 7 real Instagram accounts that strictly posted images of buildings, travel, and furniture. There were no people present in the neutral feeds. The researchers periodically checked the feeds to ensure that they remained as consistent to the designated groupings as possible.



*Figure 2.* Example photograph of the neutral social media post. Skyline Magazine [@skyninemagazine]. (2020, January 21). Riyadh Skyline by@botaby [Instagram photo]. Retrieved from [https://www.instagram.com/p/Ba9bBrCHiMy/?utm\\_source=ig\\_web\\_copy\\_link](https://www.instagram.com/p/Ba9bBrCHiMy/?utm_source=ig_web_copy_link)

## Participants

A convenience sample of a total of 47 out of 50 recruited college men aged 18-23 (M=19.4) from a small, selective liberal arts college participated in this study. Three of the participant's data were not included as they did not complete the post-test. Participants



reported spending an average of 1-2 hours on social media each day on the following sites: Facebook (85%), Instagram (83%), Snapchat (85%), and Twitter (59%).

### Measures

***State Body Satisfaction-Visual Analogue Scale (VAS).*** Similar to previous research that examined changes in state body satisfaction, computer based visual analogue scales (VAS) were used (Agliata & Tantleff-Dunn, 2004; Hausenblas, Janelle, Gardner, & Hagan, 2003; Heinberg & Thompson, 1995; Humphreys & Paxton, 2004; Prichard & Tiggemann, 2012; Tiggemann & Slater, 2014). VAS is used to assess immediate changes in mood and body dissatisfaction and are useful in countering the effects of demand characteristics (Thompson, 1996). The computer-generated VAS automatically recorded the numerical representation provided by the participant on a 100-point scale (1=lowest score, 100=highest score). The VAS measures included Appearance Satisfaction, Weight Dissatisfaction, Body Dissatisfaction, Self-consciousness, and Feelings of Unattractiveness.

***The State Comparison Scale.*** To measure state appearance comparison participants answered items that were similar to those constructed by Tiggemann and McGill (2004). Participants were asked the following after viewing the feeds: please indicate the degree on a scale of 1-7 to which you compared your overall appearance (or life for the neutral feeds) to the images in the feed and please indicate the degree on a scale of 1-7 to which you compare yourself (or life for the neutral feeds) to specific aspects of the images. In order to not reveal the purpose of the study, the above questions were embedded with more general questions about the extent to which participants thought about specific features of the images and feeds, such as the quality of the images and how much importance they placed on the number of likes or comments on images posted by others.

***Drive for Muscularity Scale (DMS).*** The Drive for Muscularity Scale (DMS; McCreary & Sasse, 2000) is 15-item, reverse-scored scale that measures muscularity-oriented attitudes (ADMS) and behaviors (BDMS) and provides an overall score on a 6-point Likert scale (1=always to 6=never). Example questions include, "I wish that I were more muscular," "I lift weights to build up muscle," and "I think that my chest is not muscular enough." The DMS demonstrated overall reliability  $r=0.84$  (McCreary & Sasse,

2000) and test–retest reliability  $r=0.93$  (Cafri & Thompson, 2004). In the current study, the Cronbach alpha coefficient was 0.70.

## **Procedure**

The study was approved through the college’s Institutional Review Board. Participants were recruited through an online recruitment system (Sona) and via announcements in psychology classes. Participations could receive research credits for class or volunteer their name to be submitted for a gift card drawing at the end of the study. The study was titled, “The Influence of Social Media on Memory and Health Activities” as a cover to the true purpose of the study and decrease demand characteristics. All participants signed up for a timeslot on Sona and were required to sign an informed consent form upon arrival. In a private room, participants first completed the measure of social networking use (hours per day on social media and social media platforms) and pre-exposure VAS for body and appearance satisfaction on the iPads provided. After a brief, 5-minute filler task, participants were randomly assigned, using “Research Randomizer,” to one of the two conditions, experimental ( $n=26$ ) versus neutral images ( $n=21$ ). For the filler task, a series of classical music extracts were played and participants were asked to rate each extract for how pleasant they found it on a scale of 1 (extremely unpleasant) to 9 (extremely pleasant). Past research suggests that a brief distraction task is sufficient to allow mood states to return to baseline (Herbozo & Thompson, 2010; Lyubomirsky & Nolen-Hoeksema, 1995).

In order to enhance the study’s ecological validity and immediacy (Tiggemann & Zaccardo, 2015), participants were then provided an iPad and were instructed to scroll through the assigned Instagram feed for 8-10 minutes. According to the mobile application tracking system, Localytics, the average time people spend on Instagram each session is approximately 7-9 minutes. Participants were also instructed to pay attention to the images, noting the number of likes and the comments of the various images on the feed and to “like” any pictures they wanted. This was meant to increase external validity and mimic an Instagram user’s experience. Following the exposure to the Instagram images, participants immediately completed the post-exposure VAS, the State Appearance Comparison Scale and Drive for Muscularity Scale.

## RESULTS

Descriptive information regarding homogeneity of the two groups pre-test is presented in Table 1. The only significant differences between groups was in VAS weight dissatisfaction where the neutral group demonstrated more weight dissatisfaction prior to the experiment.

Table 1  
*Group Comparisons on Pre-tests Measures*

Variable	Experimental Group (n=26)		Neutral Group (n=21)		<i>t</i> -value	<i>p</i> -value
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
VAS body satisfaction	68.00	23.67	63.14	17.90	0.77	.44
VAS weight dissatisfaction	25.88	30.49	46.67	27.89	2.41	.02*
VAS self-conscious	29.07	33.16	38.23	29.03	0.99	.32
VAS appearance satisfaction	75.07	18.49	67.23	17.34	1.48	.14
VAS feel unattractive	21.73	23.72	28.38	22.75	0.97	.33

\**p*<.05, two tailed

### Mixed ANOVA

All of the VAS state body satisfaction scores were analyzed using a 2 x 2 mixed ANOVA with the within factor of time (pre and post exposure) and the between-subject factor of group (experimental or neutral). The purpose of using this test was to ensure that there were no differences in scores pre-exposure and to determine if the scores changed over time by group. Tests were conducted using Bonferroni adjusted alpha levels of .01 per test (.05/5). VAS-Appearance Satisfaction.

A mixed between-within subjects analysis of variance was conducted to assess the impact of the two different Instagram exposures (mesomorph, neutral) on participants scores on the Visual Analogue System (VAS) for appearance satisfaction across two time periods (pre and post). There was a significant interaction between group and time, Wilks'

Lambda = .877,  $F(2, 44) = 6.30$ ,  $p = .01$ , partial eta squared = .01. There was a main effect for time, Wilks' Lambda = .91,  $F(2, 44) = 4.19$ ,  $p = .046$ , partial eta squared = .08 with the experimental group showing a reduction in scores with appearance satisfaction. There was no significant difference in mean scores between groups,  $F(1, 45) = .006$ ,  $p = .93$ , partial eta squared = .001. When inspecting the interaction, the experimental group scores decreased significantly from Time 1 to Time 2 to ( $M=75.07$ ,  $SD=18.49$ ;  $M=60.04$ ,  $SD=0.71$ ) indicating a decrease in scores on "pleased with my appearance right now" whereas the neutral group scores increased across time ( $M=67.24$ ,  $SD=17.34$ ;  $M=86.76$ ,  $SD=19.40$ ).

**VAS-Weight Dissatisfaction.** There was no significant interaction in the 2 x 2 mixed ANOVA for weight dissatisfaction (I am dissatisfied with my weight right now), Wilks' Lambda = .98,  $F(2, 44) = .73$ ,  $p = .36$ , partial eta squared = .016. There was not a substantial mean effect for time across the two time periods between the experimental group pre-test ( $M=25.88$ ,  $SD=30.49$ ) and post-test ( $M=26.80$ ,  $SD=28.88$ ) and the neutral group pre-test ( $M=46.66$ ,  $SD=27.89$ ) and post-test ( $M=43.42$ ,  $SD=26.70$ ). However, there was a main effect comparing the two groups,  $F(1, 45) = 5.39$ ,  $p = .02$ , partial eta squared = .107, indicating a small effect.

**VAS- State Body Satisfaction.** There was no significant interaction or main effects found in the 2x2 mixed ANOVA for state body satisfaction (I am pleased with my appearance right now). Although no statistical significance was found, upon further examination of the interaction plots, an interesting pattern emerged. At pretest, current body satisfaction was higher in the experimental group ( $M=68.00$ ,  $SD=23.67$ ) compared to the neutral group ( $M= 63.14$ ,  $SD=17.92$ ). However, post exposure, the neutral group displayed higher body satisfaction ( $M= 67.85$ ,  $SD= 16.67$ ) compared to the experimental group ( $M=60.53$ ,  $SD= 29.79$ ). Therefore, there is a complex relationship that should be explored further.

**VAS-State Self-Conscious.** There was no significant interaction in the 2 x 2 mixed ANOVA for self-conscious (I feel self-conscious right now); Wilks' Lambda = 1.00,  $F(2, 44) = .007$ ,  $p = .933$ , partial eta squared = .001. There was not a statistically significant main; Wilks' Lambda = .98;  $F(1, 45) = .638$ ,  $p = .429$ , partial eta squared = .014 effect on time or between groups;  $F(1, 45) = 1.234$ ,  $p = .27$ , partial eta squared = .001.

**VAS- State Feelings of Unattractiveness.** There was no significant interaction in the 2 x 2 mixed ANOVA for feelings of unattractiveness (I feel unattractive right now); Wilks' Lambda= .98,  $F(2, 44) = .494$ ,  $p = .48$ , partial eta squared = .011. There was not a substantial mean effect for time Wilks' Lambda= .956,  $F(2, 44) = 2.07$ ,  $p = .15$ , partial eta squared = .04, and there was no main effect comparing the two groups,  $F(1, 45) = .654$ ,  $p = .42$ , partial eta squared = .01.

### **State Comparison- Post-test Analysis**

To evaluate comparisons, two state appearance measures were administered following the Instagram exposures for both groups. An independent-samples t-test was conducted to compare the State Appearance Comparison-*Overall* scores (how much did you compare your *overall* appearance (or life for the neutral group) to the images in the feed?). There was a significant difference in scores between groups post-test on overall comparison with the neutral group scoring lower on comparison ( $M=2.33$ ,  $SD=1.24$ ) compared to the experimental group ( $M=3.27$ ,  $SD=1.40$ )  $t(45) = 2.4$ ,  $p = .02$ , two tailed. The magnitude of the difference in means was small (eta squared = .11).

An independent-samples t-test was conducted to compare the State Appearance Comparison-*Aspects* scores [how much did you compare *aspects* of appearance (or life for the neutral group) to the images in the feed?] between the groups after exposure. There was a significant difference in scores between groups post-test on overall comparison with the neutral group scoring lower on comparison ( $M=2.52$ ,  $SD=1.16$ ) compared to the experimental group ( $M=3.42$ ,  $SD=1.53$ )  $t(45) = 2.53$ ,  $p = .03$ , two tailed. The magnitude of the difference in means was small (eta squared = .12).

### **Drive for Muscularity Scale**

An independent-samples t-test was conducted to compare the DMS scores between the groups after exposure. There was no significant difference in scores between groups, although the neutral group scored lower on DMS ( $M=4.13$ ,  $SD=0.94$ ) compared to the experimental group ( $M=4.40$ ,  $SD=0.14$ );  $t(45) = 1.04$ ,  $p = .30$ , two tailed.

## **DISCUSSION**

The purpose of this study was to investigate the immediate effect of exposure to the ideal male body on Instagram on men's state body satisfaction, drive for muscularity, and

body comparison and to add to the growing literature on this “new” media (Tiggemann & Zaccardo, 2015). The results of this study suggest that exposure to Instagram accounts of the mesomorph male ideal can have negative effects on men’s appearance satisfaction, weight dissatisfaction, and social comparison. Specifically, males exposed to the male ideal demonstrated a significant reduction in scores in appearance satisfaction compared to the group exposed to neutral images on Instagram. As indicated in previous research, men are becoming increasingly dissatisfied with their bodies (Adams, Turner, & Bucks, 2005; Daniel & Bridges, 2013; Pope, Gruber, et al., 2000; Karazsia, Murnen, & Tylka, 2017; Manago et al., 2015; Stefanone et al., 2011; Tantleff-Dunn, Barnes, & Larose, 2011) and our finding is consistent with previous research linking exposure to traditional media and body dissatisfaction and appearance comparisons in males (Agliata & Tantleff-Dunn, 2004; Blond, 2008; Hargreaves & Tiggemann, 2004) and to previous research linking body dissatisfaction and social comparison on social media site (Facebook and Instagram) usage in women (Fardouly & Vartanian, 2015; Tiggemann & Miller, 2010; Tiggemann & Slater, 2013, 2014; Tiggemann & Zaccardo, 2015). The implication of this finding is that viewing body-centric photographs, even briefly, through Instagram may be as detrimental as viewing them through other media sources, such as television, magazines, music videos, and advertisements. As social media applications continue to grow in popularity, users may experience increased negative body image states, culminating in body dissatisfaction. It has been argued that photo-based platforms, like Instagram, encourage users to focus even more on appearance as the pictures users post are meant to be viewed by outside *others* (Tiggemann & Zaccardo, 2015). Finally, we can only speculate about the cumulative effects of daily exposure and future research should explore the long-term impact.

Another significant and noteworthy finding of this study was in regards to changes in weight dissatisfaction in the experimental group. Interestingly, the neutral group scored significantly higher than the experimental group on weight dissatisfaction prior to the social media exposure. The reasons for this finding are unclear and could be problematic. However, after exposure the neutral group scores decreased and the experimental scores increased on weight dissatisfaction. These results suggest that exposure to the male mesomorphic ideal, for even a brief period, can have a negative

impact on weight dissatisfaction. We can speculate that men exposed to the mesomorph ideal may be more dissatisfied with their weight and, in line with previous research, desire to be more muscular (Frederick, et al., 2007) and engage in unhealthy behaviors. Future research should explore this further.

In regards to State Comparison, findings from this study indicate that male participants in the experimental group compared their *overall* appearance (or life in the neutral images) to the images in the feed and compared *aspects* of appearance (or life in the neutral images) to the images in the feed significantly more than the neutral group. Therefore, males in the experimental group engaged in more social comparison than the neutral group after exposure to Instagram images. These findings can be explained by Festinger's (1954) Social Comparison Theory and research that supports the link between media exposure and body image disturbance (Heinberg & Thompson, 1995; Posavac, Posavac, & Posavac, 1998) and the finding that male social comparison tends to center around muscularity (Gokee-Larose et al., 2004). Our findings also support previous results that the standard that people compare themselves to can include friends, relatives, or even complete strangers, not just celebrities or models (Haferkamp & Kramer, 2011).

Previous research supports the findings that exposure through traditional media to ideal male bodies can negatively impact male body satisfaction (Blond, 2008; Myers & Crowther, 2009) and our findings indicate that this may be extended to social media sites like Instagram. This is important as the use of social media has grown considerably, particularly in younger demographics (Pew Research, 2018). What is unique about the use of social media platforms is that users can choose how they present and curate themselves (Ellison, Heino, & Gibbs, 2006). According to self-presentation theory, during social interactions individuals often try to guide the impressions of others in order to avoid embarrassment and gain acceptance (Goffman, 1959). This presentation is intentional and people may filter, manipulate, and edit their photographs to present their ideal self. This may contribute to the discrepancies felt by users when they compare their body or life to those posted on Instagram. These findings also are supported by objectification theory, where it seems that Instagram can promote the disembodied nature of male bodies, where the body is to be evaluated, judged, and experienced by the *other* (Manago et al., 2015). A final unique implication related to Instagram is that the application is exclusively used on

a mobile platform (phones and tablets). As a result, users receive notifications on their mobile phones when there is new material to view; therefore, Instagram can be running in the background of one's life throughout the day.

### **Limitations and Directions for Future Research**

There are several limitations of this study that warrant further consideration. The methods used in the study attempted to enhance ecological validity by using real Instagram accounts with live feeds where the participants could engage with the media by reading real comments and “like” the pages, if they desired. This was an attempt to replicate the real-life experience of Instagram users, while maintaining some control over the content of the feeds. However, in real-life, Instagram uses algorithms and people may be more selective with the content they view online. For example, users may view posts from friends more often than strangers and users may choose to follow specific accounts. Therefore, men who are not similar to the mesomorph ideal may avoid feeds and pages related to the muscular ideal, whereas males who find these messages more salient may receive more information in their feed related to the muscular ideal. In addition, mass media provides a wider range of male body types that are acceptable, compared to female body ideals (Buote et al., 2011)

Future longitudinal and experimental work is warranted to address these concerns. In addition, the fact that there was not a control group, perhaps with images of men who do not fit the ideal, is problematic. Therefore, we cannot conclusively claim the effects of the experiment were due to the manipulation and future research should include a comparison group with non-ideal bodies. Another limitation of this study is the sample size and differences in experimental groups. This was due to limitations in the researcher's accessibility to larger samples. The limited power due to the modest sample size in the present study (N=47) may have played a role in limiting the significance of some of the statistical comparisons conducted. A post-hoc power analysis revealed that on the basis of the mean and the between-groups comparison effect observed in the present study ( $d = .12$ ), an  $n$  of approximately 86 would be needed to obtain statistical power at the recommended .80 level (Cohen, 1988). However, significant and meaningful results were found and should be replicated with a larger, more diverse sample of college-aged men. Finally, sexual identity/orientation was not asked in this study. Sexual orientation might



influence what is deemed ideal, thus skewing the results. Future research should include this variable to gain a better understanding.

### **Implications**

Because body image disturbance may be a causal factor in the development of eating disorders in women (Karazsia, Murnen, & Tylka, 2017) and other mental and health consequences, prevention programs should be developed. It may be beneficial to educate men about body image and body image investment and the potential cost and consequences. One way would be to interrupt the social comparison process through media literacy programs. Programs that target the reduction of internalization of the muscular ideal and education that focuses on social media sites should be implemented (Tiggemann & Slater, 2014). For example, programs that focus on cognitive dissonance and media literacy have resulted in reduced body dissatisfaction in college-aged women (Becker, Smith, & Ciao, 2006). College officials and counselors could target college-aged males on campus to increase awareness of body image concerns and the illicit use of steroids. Perhaps men should be instructed to limit exposure to images of the mesomorphic ideals or limit exposure to social networking screen time. In addition, research should explore how social media might be beneficial to one's physical and mental health. For example, previous research indicates that participants who follow exercise pages on Instagram, Pinterest, and Facebook remained motivated to work out and stay healthy (Vaterlaus et al., 2015).

In conclusion, the results from this experimental study support the links between Instagram, increased body dissatisfaction and increased social comparison in men. Previous research has established a link between Facebook usage and body dissatisfaction in teens and women (Fardouly & Vartania, 2015; Meier & Gray, 2014; Tiggemann & Slater, 2014). As previously discussed, Instagram is one of the most popular social media platforms and is unique because it is designed purely for sharing and posting photos, allowing users to provide hashtags, or keywords, which make it easy to search for specific themes. Although the findings of the research contribute to the growing base of knowledge related to men, body satisfaction, and social media, additional work is necessary to fully explain the processes involved in the contribution to male body dissatisfaction and social comparison.

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