

IMPACT OF INSTAGRAM'S BODY POSITIVE VS MUSCULAR IDEAL IMAGES ON
MEN'S BODY IMAGE

A Thesis
by
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Abstract

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Recently, there has been a rise in body positive images on social media applications like *Instagram*, which attempt to counter traditional culturally idealized figures. There has also been an increase in research addressing how these images affect women, yet there is still a gap in the literature on how this content affects men. The current study assessed whether image type (body positive vs muscular ideal vs appearance neutral) differentially impacted body dissatisfaction, state negative mood, and state self-objectification in a sample of men ($N = 313$). Reminiscent of past studies conducted with women, men who looked at body positive images reported lower body dissatisfaction relative to those who viewed idealized images. Also consistent with previous findings, men who viewed body positive and muscular ideal images reported higher amounts of state self-objectification compared to those who viewed appearance neutral images. Finally, as expected, positive state mood decreased for those who viewed muscular idealized images while negative state mood decreased for those who viewed appearance neutral images. Implications suggest that muscular ideal images may be particularly threatening to men's body image, whereas viewing body positive may not serve as protective a function as is hoped to counter societal standards of men's beauty.

Keywords: Muscular ideal, body-positivity, self-objectification, men, social media, Instagram

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IMPACT OF INSTAGRAM'S BODY POSITIVE VS MUSCULAR IDEAL IMAGES ON MEN'S BODY IMAGE

The concept of possessing the “ideal” figure is not new; ideal body figure ratios have been imposed on men and women since the times of Ancient Greece (Sisti et al., 2021). Today, people are consistently exposed to magazines, commercial advertisements, and social media figures, displaying what is thought to be the ideal figure for their gender, either the thin ideal for cisgender women (hereafter referred to as women; Cragg et al., 2019; Evans, 2003; Slater et al., 2012; Trekels & Eggermont, 2018) or the muscular ideal for cis-gender men (hereafter referred to as men; Cafri et al., 2005; Grieve, 2007; Grogan & Richards, 2002; Leone et al., 2005; Slater et al., 2012; White & Gillett, 1994). Even the young are not immune to this messaging as displayed by a content analysis of advertisements on websites that target adolescents (Slater et al., 2012). Though Slater et al.'s (2012) study found that cosmetics and beauty products were most frequently advertised, there was an emphasis on the thin and muscular ideals in advertisements for cosmetics, beauty products, and weight loss products.

Among the social correlates of thin ideal media saturation is a preponderance of discontent for body image among women (Grabe et al., 2008; Harper & Tiggemann, 2008; Hawkins et al., 2004; Stice et al., 1994; Stice & Shaw, 2002). Fallon and Rozin (1985) investigated this discontent by having participants indicate what they perceived to be their current and ideal figures. Men and women were weighed and then given the Stunkard Body Shape Figures Scale to rate their current figure, their ideal figure, their ideal figure for the opposite sex, and the opposite sex's ideal figure for them. Not only did women overestimate their weight more often than men, but they rated their ideal figure as thinner than what they perceived to be attractive to men. This data suggested women desired a thinner figure due to an

unknown intrinsic motivator, which, as Evans (2003) proposed, may be the belief that with thinness comes more positive life outcomes.

Rozin and Fallon (1988) repeated this methodology with undergraduate men and women along with their parents. The data among the students was similar to past findings, though by including parents in their sample, they found that the parents expressed higher levels of body dissatisfaction when compared to their children (Rozin & Fallon, 1988). Furthermore, women were shown to exaggerate men's preferences for thin women, and men tended to exaggerate the heaviness women liked for a man's body (Rozin & Fallon, 1988). While this research primarily focused on women, the results suggest that the men had desired a figure that was more muscular.

The Muscular Ideal

The societal standards for men's bodies that are asserted through the media may be partially responsible for the desire of the muscular ideal among men and boys. Western societies emphasize a need for men to be strong, provide care to the weak, and act as breadwinners and family leaders, something that is visually implied by a muscular physique (Fazeli et al., 2015; Gutierrez et al., 2020). Media images reinforce these stereotypes as seen in a content analysis of *Flex Magazine* conducted by White and Gillett (1994), where muscularity was conveyed as superior to all other body types. According to Grieve (2007), for men, the "common social ideal is lean muscularity with low body fat" (p. 65), and men appear to endorse this perception (Brierley et al., 2016). For example, in an investigation of their peer's perceived ideal body, men chose the figure that was in line with the muscular ideal (Cohn & Adler, 1992) relative to other body silhouette choices provided.

The internalization of the muscular ideal has been linked to harmful outcomes among men. Assertion of the muscular ideal figure for men has been linked to the development of muscle dysmorphia (MD), a subcategory of body dysmorphic disorder (Dawson & Hammer, 2020; Grieve, 2007; Leit et al., 2002; Leone et al., 2005). Muscle dysmorphia (MD) has been diagnosed in people “chasing” the muscular ideal and can be defined as a “collection of attitudes and behaviors that are characteristic of an extreme desire to gain body mass” (Grieve, 2007, p. 64). Individuals affected by this disorder are preoccupied with their inability to see themselves as lean and muscular, no matter how they compare to the average person. This can lead to impairment in daily functioning and feelings of distress (Cafri et al., 2005; Dawson & Hammer, 2020; Grieve, 2007). However, the muscular ideal does not only affect those with muscular dysmorphia. Grogan et al. (2019) found that the men consistently brought up the importance of being slender, muscular, and tall when viewing their body composition scans after trying on clothing. In circumstances where their scan showed divergence from the muscular ideal, they often indicated recognition of a problem area on which they needed to work (Grogan et al., 2019). It is not uncommon for men to engage in self-deprecating comments about their body, known as muscle-talk, which is analogous to women’s body-deprecating behaviors, or fat talk (Lin et al., 2019; Olivardia et al., 2004). Like other body disparaging-talk, muscle-talk correlates with body shame and dissatisfaction (Engeln et al., 2013; Lin et al., 2019; Velkoff et al., 2019). This is especially concerning since it has been seen that with increased body dissatisfaction, there is an increased amount of eating disorder symptomatology displayed by the individual (Dawson & Hammer, 2020; Engeln et al., 2013; Mitchison & Mond, 2015).

Self-Objectification and Its Consequences

Body disparaging talk is not the only associate of body dissatisfaction and increased display of eating disorder symptomatology: self-objectification can also relate to these phenomena. Self-objectification originates from the Fredrickson and Roberts' (1997) proposal of Objectification Theory. The theory postulates that objectification occurs when people's bodies, body parts, or sexual functions are separated from their identity, therefore, reducing their status or regard as a person, as if some aspect of their body now represents their identity. Over time, repeated objectification can manifest as self-objectification, which is defined as an internalization of the objectifying viewer's perspective of their bodies that causes preoccupation with one's physical appearance (Fredrickson & Roberts, 1997). Self-objectification can cause a person to have higher levels of shame, especially regarding their body as well as the potential for restrained or disordered eating behaviors (Fredrickson et al., 1998). Fredrickson et al. (1998) argued that self-objectification that induces shame and disordered eating can consume mental resources such that performance on demanding physical or mental activity is diminished. This has implications for how self-objectification can negatively impact a person's ability to accomplish their daily goals.

Fredrickson et al. (1998) evaluated these aspects of Objectification Theory through two experiments, testing the hypothesis that experimentally inducing self-objectification would lead to body shame, which would then predict restrained eating behaviors and diminished math performance. In their first experiment, undergraduate women completed a trait measure of self-objectification and were then asked to put on either a sweater or swimsuit. The swimsuit was predicted to induce higher levels of state self-objectification. The participants were then presented with food they could choose whether to eat. Finally, they completed a math test to

measure if those with higher objectification levels had more mental resources consumed and might perform worse on the test. They found that participants who had higher levels of trait self-objectification had higher levels of body shame when asked to wear a swimsuit. This was not the case when women were asked to wear the sweater. Body shame was also correlated with restrained eating behaviors, supporting the notion that self-objectification is a precursor to disordered eating.

As a means of establishing ecological validity, Fredrickson et al. (1998) conducted a second study that included men. Results demonstrated that men's math performance did not vary as a function of the type of clothing that they wore (sweater or bathing suit), but women's did. Like Study 1, women performed worse when they wore the swimsuit, again supporting that self-objectification draws attentional resources and disrupts mental performance among women (Fredrickson et al., 1998). Thus, self-objectification increases body dissatisfaction and body surveillance, and diminishes cognitive performance in women (Frederick et al., 2007; Quinn et al., 2006).

Fredrickson et al. (1998) did not conceptualize that self-objectification may manifest differently in men and women. In the experiment, the participants tried on different articles of clothing, which may serve as more of a trigger of objectification for women than men. That is, wearing a swimsuit, in particular, is likely to preoccupy women's attention with body-as-an-object, drawing mental resources away from focus on cognitive performance. It is possible that if stimuli were used that were associated more heavily with inducing men's objectification (e.g., images of muscular men, supplements, statements regarding muscularity; Olivardia et al., 2004), a more pronounced impact on cognitive performance would be demonstrated. This oversight

might have restricted our understanding of whether and how self-objectification can impact men.

It had been previously proposed that Objectification Theory has become more applicable to men's experiences than originally theorized (Bazzini et al., 2015; Frederick et al., 2007; Tiggemann & Kuring, 2004). In fact, studies conducted after Fredrickson et al. (1998) found a connection between men's body dissatisfaction and self-objectification (Grieve, 2007; Parent & Moradi, 2011; Slater & Tiggemann, 2010; Tiggemann & Kuring, 2004). For example, Tiggemann and Kuring (2004) had undergraduate men complete the Self-Objectification Questionnaire, body surveillance and body shame subscales of the Objectified Body Consciousness Scale, Appearance Anxiety Scale, and short form of the Beck Depression Inventory. They found the men's self-reported body shame and appearance anxiety correlated with disordered eating and depressed mood, leading them to conclude that the model proposed by Objectification Theory can describe men's experiences (Tiggemann & Kuring, 2004).

Self-Objectifying Messaging and Influence in Advertisements

Assessments of how media (e.g., advertisements, commercials) contributes to self-objectification have primarily focused on their negative and limiting portrayals of women and girls (Choi et al., 2008; Cragg et al., 2019; Harper & Tiggemann, 2008; Silverstein et al., 1986). However, men also receive messages that objectify their bodies through the media. Bazzini et al. (2015) examined cover captions on *Men's* and *Women's Health* magazines published between 2006 and 2011 and found every magazine cover examined (regardless of the target audience, men vs. women) contained at least one objectifying phrase (e.g., phrases that mentioned body parts). Since previous research of objectifying media advertisements focused on women, this finding was significant in that it provided evidence that men are also commonly objectified in the

media. When comparing captions in *Men's* and *Women's Health*, they found that messages focused on exercising for appearance reasons (e.g., “sculpt hot curves,” or “build arms like these!”) were 1.63x more likely to be mentioned in *Women's Health* than in *Men's Health*. Similarly, dieting (e.g., “conquer your cravings”) was 1.95x more likely to be mentioned in *Women's Health*, and weight loss (e.g., “new fast track weight-loss plan”), and 1.6x more likely to be mentioned relative to *Men's Health*. In contrast, general exercise (e.g., “maximize your workout”) was 2.43x more likely to be mentioned in *Men's Health*. Bazzini et al. concluded that *Men's* and *Women's Health* were more similar than different when it came to objectifying messages in cover captions. This showed that men were more objectified by magazines than originally expected, and that using Objectification Theory to describe men's experiences viewing media is appropriate.

Ideal figures for men and women are not solely featured in print or static advertisements. Fowler and Thomas (2015) assessed men's roles in primetime commercials that aired in the United States between 2003 and 2008. They saw an increase in roles from 2003 to 2008 that depicted men as strong and well-muscled, and a decrease in men with figures that were slim, soft, or rounded (Fowler & Thomas, 2015). Media like this can influence the body image of men, as it provides men with more opportunities for social comparison (Grieve, 2007). As with women and girls, men's and boys' media exposure has been suggested to be related to body dissatisfaction (Grieve, 2007; Montgomery Sklar, 2017).

Leit et al. (2002) studied how media affects body dissatisfaction in undergraduate men. Participants were asked to create the figure that best represented their own and their ideal body using the Somatomorphic Matrix that allowed the men to visually adjust pictures of a man to make them more or less muscular and possess more or less body fat. They found that men who

viewed 20 images depicting the muscular ideal (e.g., clothing advertisements used in popular magazines, billboards, email advertising campaigns) had a much larger disparity between their current body and their ideal body compared to those who viewed advertisements that were appearance neutral. Their results suggest that these ads have an immediate and measurable effect on body dissatisfaction in men, which can be detrimental considering body dissatisfaction plays a central role in the development of MD and eating disorders (Grieve, 2007). This indicates that men and women are both vulnerable to self-objectifying influences like media and, concurrently, body shame and body dissatisfaction, as well as engagement in body disparaging talk.

Body Positivity

Since 2012, there has been an increase in media and advertisements that support the body-positivity movement (Cherry, 2020). The body-positivity movement has been summarized as a class of image-centric media that aims to improve individuals' relationships with their appearance, especially their body shape and size, while challenging the ideal figure that is commonly asserted in the media for their gender (Cwynar-Horta, 2016; Stevens & Griffiths, 2020). The body-positivity movement relies on developing one's positive body image, which is alleged to comprise six core components. Tylka and Wood-Barcalow (2015) defined these components as follows: 1) body appreciation – focused on gratitude for function, health, and unique features; 2) body acceptance and love – accepting body types that do not fit the ideal asserted by media; 3) conceptualizing beauty broadly – beauty based on a variety of characteristics; 4) adaptive investment in body care – exercise, sleep, hydration, and feeding the body as it needs it; 5) inner positivity – mindfulness and kindness that radiates to external attributes like appearance and behavior; 6) proactively filtering out negative information and accepting the positive.

Instagram, the most popular photo-sharing app on the social media market, is a common platform for users to give and receive body positive messages. Cohen et al. (2019a) recruited women aged 18- to 30-years old to measure how they responded to viewing different types of *Instagram* posts. The participants were randomly assigned to one of three image conditions: body positive, thin ideal, or appearance neutral. Each condition consisted of a set of 20 images taken from public *Instagram* accounts. Images in the body positive condition showed women with body types outside the thin ideal, and images in the thin ideal condition showed women whose bodies aligned with the thin ideal. The appearance neutral condition acted as a control condition, where participants viewed posts featuring nature with no humans in the photo. Participants completed measures of state mood and body satisfaction pre- and post-exposure to the manipulation, and measures of state self-objectification and state body appreciation after exposure to the manipulation. They found that the women who viewed the body positive content had increased state body satisfaction and higher state body appreciation in the post measurement, as well as higher state positive affect relative to those who viewed the images depicting the thin ideal (Cohen et al., 2019a). Unexpectedly, the Ten Statements Test revealed that state self-objectification was *highest* for those in the body positive condition, followed by thin-ideal and lowest scores observed in the appearance neutral condition. This means that those in the body positive and thin ideal conditions made a similar number of statements regarding their body appearance and ability (e.g., “I am fat,” “I am beautiful,” “I am athletic,” “I am a size 0”) with those in the appearance neutral conditions making significantly fewer of these types of statements. Upon analyzing the valence of each appearance-related statement given, women in the body positive condition were found to make significantly more positive statements (e.g., “I am beautiful,” “I am sexy”) than those who viewed thin-ideal images (e.g., “I am ugly,” “I am

fat;” Cohen et al., 2019a). Thus, despite the body positive images evoking more body-related thoughts, perhaps these thoughts were affirming in nature rather than self-critical body thoughts evoked by thin ideal images.

Stevens and Griffiths (2020) found similar results after exposing undergraduate students (82% women) to body positive images. These findings support the emerging evidence that viewing social media content that portrays realistic bodies can be beneficial to body image and emotional well-being. It must again be noted that this research is lacking in male representation-- a demographic that is likely vulnerable to the same kinds of body-disparaging behavior (at a similar frequency) as women.

How much these images help buffer the observer from body dissatisfaction, body shame, and self-objectification is still debated. Tiggemann et al. (2020) hypothesized that exposure to body positive photo captions would lead to increased body appreciation (how positive body image is commonly operationalized) and decreased body dissatisfaction (how negative body image is commonly operationalized). In their experimental manipulation, they exposed college-aged women to *Instagram* images that either contained the thin ideal (gathered from public profiles using #fashion and #beach) or bodies deemed by pilot testers to be healthy. Within each photo condition, the presence of captions was manipulated such that the photos were shown with a body positive caption (e.g., “love your curves”; “all bodies are beautiful”) or were shown the image with no caption. They found that there was no main effect for the presence of captions, but there was a main effect of photo-type such that those who viewed the thin-ideal photos had greater body dissatisfaction compared to those in the average-sized condition. Tiggemann et al. (2020) interpreted these findings to support previous literature that suggests the visual image of

an *Instagram* post is the most prominent and salient feature to the user when compared to the caption (Tiggemann & Barbato, 2018).

Another criticism of the body-positivity movement has been its lack of inclusivity, especially regarding the lack of body positive media aimed towards men. In Cohen et al.'s (2019b) content analysis of self-proclaimed body positive posts on *Instagram*, the content showed a focus that was primarily oriented toward women in the self-proclaimed body positive content. Specifically, of 90.78% of the images that contained humans, only 5.85% were male. Lazuka et al.'s (2020) content analysis confirmed this bias, finding that most images depicted White women (67.1%), estimated to be in their 20s (66.9%). Furthermore, many individuals were deemed to be of a healthy weight (54.9%; Lazuka et al., 2020), suggesting that the body positive media's self-proclaimed counter-stereotypical messaging was still quite typical in terms of cultural beauty ideals.

Possibly one of the most compelling illustrations of men's exclusion from the body positive movement is the lack of research on it. Many studies have investigated how media and advertisements affect women's body image (Cohen et al., 2017; 2019a; Stevens & Griffiths, 2020; Tiggemann et al., 2020; Vendemia et al., 2021); however, to the best of my knowledge, there has not been anything published specifically examining how body positive images impact men's body dissatisfaction, self-objectification, or mood.

Purpose of the Present Study

With most body-positivity media targeting women, there is a disparity of information between its influence on consumers relative to men. The present study filled a gap in the literature by examining how men's body positive content on *Instagram* impacts men who use the social networking site. Using the methodology of Cohen et al. (2019a) participants viewed body

positive images (BP), muscular ideal images (MI), or appearance neutral (AN) images to assess how image type impacted men's state self-objectification, body dissatisfaction, and positive and negative state mood.

The study utilized a 3 (condition: BP vs. MI vs. AN) X 2 (time: pre- vs. post-exposure) mixed-factor factorial design to assess the difference in positive and negative mood, with time before and after the exposure as the within-subject dependent variable. The study also assessed the following dependent variables between-subjects: (1) state self-objectification differences between the conditions, (2) differences in valence of appearance related words used between conditions, and (3) body dissatisfaction differences between the conditions.

The hypotheses were as follows:

Hypothesis 1: With regard to the changes across mood (pre- vs. post-exposure) as a result of media exposure, a significant interaction was expected for positive mood such that those in the BP condition were expected to be higher at post-test than those in the AN condition, whose scores were expected to be higher than those in the MI condition. By contrast, for negative mood scores, those in the MI condition were expected to be higher relative to those in the AN condition, whose scores were expected to be higher than those in the BP condition. See Figure 1 for a visual representation of expected results.

Hypothesis 2: A main effect was predicted for image type for body dissatisfaction such that participants in MI image condition would have the highest body dissatisfaction scores, followed by those in the AN condition, with those in the BP condition producing the lowest scores.

Hypothesis 3: A main effect was predicted for image type for state self-objectification such that participants in the BP image condition would report higher self-objectification scores

(SSOS) compared to those in the MI condition. Participants in the AN (control) image condition would report significantly lower SSOS compared to both BP and MI conditions.

Hypothesis 4: A main effect was predicted for image type on word valence in the responses to the state self-objectification measure such that those in the BP image condition would use the most positively valenced words, followed by AN image condition; those in the MI image condition would use the least positively valenced words. In contrast, those in the MI image condition were predicted to respond most frequently with negatively valenced words, followed by those in the AN image condition, with those in the BP image condition using the least negatively valenced words.

Pilot Study: Method

To ensure that the visual stimuli used in the study are representative of the muscular ideal or body positivity, a pilot study was conducted. In a manner like that used by Cohen et al. (2019a), independent male raters were recruited. Raters were provided with a definition of ‘body positive’ (as used in Cohen et al.; *‘body positive’ refers to rejecting unrealistic body ideals and encouraging [men] to accept and love their bodies at any shape and size. Body positive Instagram posts to depict [men] proudly posing their unique bodies*) and the ‘muscular ideal’ (*‘muscular ideal’ refers to the common social ideal that men should have a figure that has lean muscularity with low body fat*), and asked to rate each image on the extent it was representative of the designated category using a computer based visual analog scale (VAS; 0 = *not at all*, 100 = *extremely*). Out of 50 posts for each category, 20 images with the highest scores in each category were used in the experimental conditions.

Pilot Study: Results

The pilot study was run on Qualtrics, and 18 male participants were recruited through Prolific. Each participant was compensated through Prolific for their participation based on their demographic information. The decision was made to drop one participant's data from the analyses due to no variability in their responding (all VAS images were rated 100 out of a possible 100), demonstrating a likely response set. Thus, 17 participants (who all identified as cisgender men) were used for all analyses in the pilot study. Participants reported a mean age of 24.53 years ($SD = 2.35$).

For both the body positive and muscular ideal image categories, an average score of perceived alignment between the definition (e.g., body positive vs. muscular ideal) and the photo was calculated for each picture. Since pictures were rated on a scale of 0 (lowest) to 100 (highest), this was also the range for the average score of alignment between the photo and the definition. Originally, the threshold for selection was at the top quartile of each rating (e.g., an average rating of 75.0 or higher out of a possible 100), but too few of the images in both the body positive and muscular ideal conditions met this criterion. The criterion was then lowered such that images with a mean of 70.0 or higher were to be included, but this still did not yield enough images to meet the goal of 20 images for the muscular ideal condition. Finally, the criterion for inclusion was lowered once more to a mean rating of 65.0 or higher. At this point, there were a total of 36 body positive images and 22 muscular ideal images that met that criterion. Once images were identified as possible targets, an overt attempt to match images for such things as body position occurred (e.g., a seated body positive target was matched with a seated muscular ideal target), with consideration also given to orientation of photo (e.g., portrait

or landscape). Since the main study only required 20 images for each condition, images for which there was no similarly positioned subject in the opposite condition were discarded.

The final muscular ideal stimuli consisted of several popular accounts, including celebrities (e.g., @therock, @chrishemsworth, @henrycavill, @simuliu, @vindiesel, @jasonstatham, @princejdc), musicians (e.g., @bigsean) and professional athletes (e.g., @cristiano). The posts were perceived as promoting the muscular ideal and included full body shots and close ups with men posing in fitness attire or swim attire. The final body positive stimuli consisted of posts from individuals perceived as promoting men's body positivity on *Instagram*: (1) @zachmiko (2) @guyoverboard (3) @kelvindavis (4) @gentlemenscurb (5) @lordtroy. All photos contained images of men proudly displaying their body, which did not fit the traditional muscular ideal for men.

Main Study: Method

Participants

In accordance with replicating the methods used by Cohen et al. (2019a), participants were recruited under the study title of '*Instagram* and Memory.' Three hundred and twenty cisgender male participants were recruited through Prolific. Criteria for participation included that the participant identified as a cisgender man, had an active *Instagram* account¹, and was between 18 and 30 years old at the time of participation. Seven participants who completed the study did not meet all these criteria and therefore their data were excluded from analyses. Participants received \$2.08 in compensation after study completion.

Using G*Power (Faul et al., 2007), I conducted a power analysis using the "Means: Difference between two independent means (two groups)." For $\alpha = .05$, $1 - \beta = .80$, it revealed that a total of 278 men were needed to achieve adequate power for the study to detect an effect size

¹This contains an error in the sample description. While participants were screened for previous *Instagram* usage and account possession, the authors are unsure of how recently participants last logged into the social networking site.

of $d = 0.30$. This calculation was based on the effect size reported in Cohen et al. (2019a) of $d = 0.46$. Based on the previous body image and objectification literature, men seem to display a more nuanced effect on these constructs compared to women. To account for this, I decided to use a conservative effect size of $d = 0.30$ to ensure adequate power. To account for potential attrition, I planned to recruit a total sample of 320 participants. All procedures adhered to human participant compliance standards as approved by the Institutional Review Board (#HS-22-48, see **Appendix A**).

Demographics

Participants reported a mean age of 24.6 years old ($SD = 3.4$). Participants were asked to report their weight ($M = 173.9$ pounds, $SD = 39.13$) and height ($M = 69.9$ inches, $SD = 3.20$), which was used to calculate BMI ($M = 25.0$, $SD = 5.36$). The majority of those in the final sample of 313 participants identified as White (64.1%), followed by Asian (17.0%), Black (8%), two or more races (4.9%), other (2.6%), Hispanic (1.9%), Latinx (1.0%), and Native Hawaiian or Pacific Islander (.3%). Participants were also asked their sexual orientation, to which the majority identified as straight (83.7%), followed by bi-sexual (6.7%), homosexual (4.8%), pansexual (2.2%), asexual (.6%), and queer (.3%). A small percentage of the participants preferred not to disclose their sexual orientation (1.6%). Participants were also to asked to estimate in minutes how much time they spent on social media each day ($M = 137.1$, $SD = 148.23$).

Additionally, participants were asked a series of questions assessing their history with exercise, steroid usage, and workout supplement intake. Many of the participants (76.9%) indicated that they participated in regular exercise. While no participants indicated current anabolic steroid usage, four (1.3%) indicated that they had previously used anabolic steroids. As

far as workout supplement intake, 128 (41.4%) of participants indicated previous usage though only 62 (20%) indicated current usage. Lastly, participants were asked to indicate how many days a week they exercise, with 17.6% reporting zero days, 9.6% reporting one day, 19.5% reporting two days, 22.7% reporting three days, 9.9% reporting four days, 12.5% reporting five days, 2.9% reporting six days, 5.4% reporting seven days.

Materials

Body Satisfaction

The Male Body Attitudes Scale (MBAS-R) was originally designed by Tylka et al. (2005) and revised by Ryan et al. (2011). The study at hand used the revised version to assess men's attitudes and dissatisfaction toward their body fat, muscularity, and height (see **Appendix B**). The 15-item measure asked participants the extent to which they endorsed each statement on a Likert scale (1 = never, 2 = rarely, 3 = sometimes, 4 = often, 5 = always), where two items were reverse scored (e.g., "I feel satisfied with my muscularity" and "I am satisfied with my height"). Cronbach's alpha was reported as .88 by Ryan et al. (2011). In this study, Cronbach's alpha was found to be .89. Scores on scale items were averaged together to create an overall body dissatisfaction score, where higher scores indicated higher levels of individual body dissatisfaction.

Mood

I used the same state mood measurement as Cohen et al. (2019a), where participants used a computer-based visual analog scale (VAS) before and after exposure to the image set assigned for each condition (see **Appendix C**). Participants were asked to indicate how they feel 'right now' by moving a marker across a horizontal line that ranges from 0 (not at all) to 100 (very much) across four mood dimensions: depressed, anxious, confident, happy. Cohen et al. (2019a)

cited how previous research suggested that in low stress situations positive and negative mood are experienced separately, therefore the emotions were measured as separate dimensions (Reich et al., 2003). Ratings of ‘happy’ and ‘confident’ were combined to form a state positive mood score, while ratings of ‘depressed’ and ‘anxious’ were combined to form a state negative mood score (Cohen et al., 2019a). These scores were averaged together so that the total positive and negative state mood scores fall on a scale of 0-100. In Cohen et al.’s (2019a) study, the positive mood scale demonstrated acceptable reliability pre- ($\alpha = .69$) and post- ($\alpha = .75$), and the negative mood scale demonstrated good reliability pre- ($\alpha = .77$) and post- ($\alpha = .80$). In this study, Cronbach’s alpha reliability for the positive mood scale was found to be good for the pre- ($\alpha = .80$) and post- ($\alpha = .80$), and the negative mood scale was found to be acceptable for the pre- ($\alpha = .77$) and post- ($\alpha = .74$).

State Self-Objectification

This is a modified version of the Twenty Statements Test used by Fredrickson et al. (1998) to assess state self-objectification in men and women. The Ten Statements Test (TST) assessed transient effects that are induced by viewing body positive images versus those that promote the muscular ideal. Participants were prompted to reflect upon how viewing the posts made them feel about themselves (see **Appendix D**). They were then provided ten blank spaces, where they were asked to make statements about themselves that completed the sentence, “I am _____.” All statements were coded even if the participant did not fill in each of the ten blanks provided ($M_{completed} = 8.75$). Two independent coders, naive to the study’s hypotheses, classified all responses in one of six categories derived from the categories used by Fredrickson et al. (1998): (a) body shape and size (e.g., “I am a size 0,” “I am fat”), (b) appearance (e.g., “I am sexy,” “I am pretty”), (c) physicality (e.g., “I am strong,” “I am athletic”), (d) traits and roles

(e.g., “I am a mother,” “I am kind”), (e) hobbies and political affiliation (e.g., “I am liberal” “I am into singing), (f) state and emotions (e.g., “I am insecure,” “I am proud”). Categories were regarded as mutually exclusive.

The coding team consisted of two undergraduate psychology majors who were both women. Before coding began, they were trained with the definitions of each category and were given example statements to practice categorization. The coders then rated the first 20% of the data (Krippendorff’s Alpha = .668) before they reconvened and discussed questions encountered when coding. The coders then rated the final 80% of the data, in which interrater reliability was found to be good (Krippendorff’s Alpha = .861). Disagreements between the raters were resolved through discussion by the research team. A total count was taken in order to assess the amount of self-objectifying statements made (in categories a-c), which made up the participant’s state self-objectification score (based on scoring method used by Daniels, 2009).

After coding of statements was completed, statements that were categorized as relevant to body shape and size, appearance, and physicality (a-c) were coded for the emotional tone of the responses. Responses were coded by the same two undergraduate psychology raters, naive to the study’s hypothesis, and classified as either positive, neutral, or negative. The valence of each word was assessed according to previously designated affective word norms (Aubrey et al., 2009; Bradley & Lang, 1999). Again, categories were mutually exclusive. The same coding sequence progressed where the raters coded the first 20% of the data (Krippendorff’s Alpha = .826), reconvened to discuss questions, then coded the final 80% of that data (Krippendorff’s Alpha = .878). Once again, disagreements between the raters were resolved through discussion by the research team. A count was conducted to assess the total amount of positively, neutrally, and negatively valenced words each participant used.

Procedure

Participants were recruited through the on-line platform, Prolific. In return for their participation, they received monetary compensation in the amount of \$2.08. As in Cohen et al. (2019a) procedure, participants were recruited under the study title '*Instagram* and Memory,' coupled with the following information:

We are interested in how your attention and memory are affected when viewing imagery on social media. After you finish viewing the images, you will be asked questions about what you have seen so please pay close attention to the images presented. How you feel can also influence your attention, so we are also going to monitor your mood and how you feel throughout the study. (p. 1550)

Participants were first tasked to read and electronically sign an informed consent form. After consent was granted, participants were presented with the pre-exposure state mood measure. Participants were then randomly assigned to either the MI condition, BP condition, or the AN condition. In each condition, participants viewed 20 images for at least 10-seconds. The images were presented in the *Instagram* frame to increase ecological validity, though comments and likes on the picture were not visible. Images in all conditions were randomized to prevent order effects. After viewing all images in the condition, participants were prompted to retake the state mood assessment as well as complete the MBAS-R, the TST, and a demographics measure. The entire session lasted around 13-minutes. Upon completion of questionnaires, participants viewed debriefing information on the study and were provided online resources to aid with negative affect brought on by body dissatisfaction and self-objectification.

Design and Statistical Analyses

Once all data was collected, I also replicated the statistical analyses that were used by Cohen et al. (2019a). Descriptive statistics (mean, median, standard deviation) were analyzed, and statistical assumptions checked. A 3 (condition: BP vs. MI vs. AN) X 2 (time: pre- vs. post-exposure) mixed-factor ANOVA was used to assess the difference in state mood pre- and post-exposure within subjects across conditions. A series of one-way ANOVAS was then utilized to assess state self-objectification, valence, and body dissatisfaction between subjects.

The study utilized a mixed factorial design. The independent variable was which set of 20 images the participant viewed: MI, BP, or AN (control). The appearance of the images in each condition was randomized to prevent order effects. The first dependent variable was pre- and post-manipulation assessment of mood via the VAS. These measures created a 3 (condition: BP, AN, MI) x 2 (time: pre- or post-exposure) factorial design, with mood assessment serving as the within-subjects variable. The second dependent variable was self-reported state body dissatisfaction as measured by the MBAS-R after image exposure. The final dependent variable measured was reported state self-objectification measured using the TST after image exposure.

Main Study: Results

Preliminary Analyses

Missing data was less than 5% across all dependent variables. In all cases of missing data, mean imputation was used in accordance with recommendations by Hawthorne et al. (2005). A series of Welch's one-way ANOVAs were conducted to ensure that there were no initial differences between participants in the three image conditions.² There were no significant

² Assumption of normality (Shapiro-Wilk) was violated for each ANOVA, though Levene's homogeneity of variances assumption was met for all four tests. A transformation of the data was conducted and submitted to an ANOVA, but new analyses were not substantially altered from the untransformed data thus the original analyses were included in the document so that means could be directionally evaluated.

group differences in age, $F(2, 206) = 2.01, p = .14$, or BMI, $F(2, 203) = .139, p = .871$. There were also no significant group differences between pre- exposure positive mood, $F(2, 206) = .659, p = .518$ or pre- exposure negative mood $F(2, 206) = .107, p = .899$. As an exploratory analysis, correlations between BMI and dependent variables were run. Means, standard deviations, and correlations among BMI and dependent variables can be found in Table 1.

Positive State Mood

A 3 (condition: BP vs. MI vs. AN) X 2 (time: pre- vs. post-exposure) mixed factor ANOVA , with pre- and post-exposure positive mood scores entered as the within-participants variable, was run to investigate whether changes in positive state mood was associated with exposure to different types of *Instagram* images. Sphericity tests were run, but since the mixed factor ANOVA had two levels this assumption was met. Levene's Homogeneity of Variance tests were run on pre- and post-exposure positive mood to make sure that the data met the assumptions of ANOVA. Both variables met all assumptions, so analyses were continued.

There was a significant main effect of time on positive state mood, $F(1, 310) = 5.24, p = .023, \eta_p^2 = .017$. Positive mood was higher across conditions when measured pre-exposure ($M = 60.4, SD = 22.2$) compared to when measured post-exposure ($M = 58.9, SD = 23.6$). There was not a significant main effect of experimental condition on positive state mood, $F(2, 310) = .173, p = .841, \eta_p^2 = .001$.

Importantly, there was also a statistically significant interaction between time and image condition on self-reported positive mood scores, $F(2, 310) = 9.98, p < .001, \eta_p^2 = .060$. Tukey's post hoc tests revealed there was partial support for Hypothesis 1 with a significant decrease in positive mood from Time 1 to Time 2 when participants were exposed to muscular ideal images

(Mean difference = 5.524, $SE = 1.11$, $p_{tukey} < .001$), see Table 2. However, contrary to Hypothesis 1, no differences emerged between Time 1 versus Time 2 on positive mood reports for either those in the body positive or appearance neutral image conditions. All post hoc comparisons for the interaction of time and image condition on positive mood scores can be found in Table 2. A visual representation of the post hoc comparisons for the interaction of time and image condition on positive mood scores can be found in Figure 3.

Negative State Mood

A 3 (condition: BP vs MI vs AN) X 2 (time: pre- vs post-exposure) mixed factor ANOVA, with pre- and post-assessment negative mood scores entered as the within-participants variable, was run to investigate whether changes in negative state mood was associated with exposure to different types of *Instagram* images. Sphericity tests were run, but since the mixed ANOVA had two levels this assumption was met. Levene's Homogeneity of Variance tests were run on pre- and post-exposure negative mood to make sure that the data met the assumptions of ANOVA. Both variables met all assumptions, so analyses were continued.

There was a significant main effect of time on negative state mood, $F(1, 310) = 6.89$, $p = .009$, $\eta_p^2 = .022$. Negative mood was higher across conditions when measured pre-exposure ($M = 25.5$, $SD = 22.0$) compared to when measured post-exposure ($M = 24.1$, $SD = 21.5$). There was not a significant main effect of experimental condition on negative state mood, $F(2, 310) = .602$, $p = .549$, $\eta_p^2 = .004$.

As with positive state mood, there was a statistically significant interaction between time and image condition on self-reported negative mood scores, $F(2, 310) = 4.35$, $p = .014$, $\eta_p^2 = .027$. Once again, post hoc tests revealed partial support for Hypothesis 1. For those in the appearance neutral condition, participants reported less negative mood after stimulus exposure

relative to before exposure (Mean difference = 3.163, $SE = .907$, $p = .007$). However, contrary to Hypothesis 1, negative mood reports did not vary across time for those in either the BP or MI image conditions. All post hoc comparisons for the interaction of time and image condition on negative mood scores can be found in Table 3. A visual representation of the post hoc comparisons for the interaction of time and image condition on negative mood scores can be found in Figure 4.

Body Dissatisfaction

A one-way ANOVA (Welch's) was run to investigate whether there were differences in body dissatisfaction after exposure to the different *Instagram* image conditions. Each participant's mean body dissatisfaction score, as determined by the RMBAS, was entered as the dependent variable, and experimental image condition was the grouping variable. Shapiro-Wilk normality test and Levene's Homogeneity of Variance tests were run to ensure that the data met the assumptions of ANOVA. Neither assumption was violated, so analyses were continued.

A statistically significant effect of image exposure on self-reported body dissatisfaction emerged, $F(2, 206) = 4.32$, $p = .015$. Tukey's post hoc tests revealed a significant mean difference between those who viewed the BP images and the MI images, and those who viewed the AN and MI images. In partial support of Hypothesis 2, those in the BP condition reported lower body dissatisfaction ($M = 2.64$, $SD = .718$) than those in the MI conditions ($M = 2.90$, $SD = .819$). However, contrary to the predictions, there was no significant difference in reports of body dissatisfaction between those in the BP condition and those in the AN condition ($M = 2.62$, $SD = .712$).

State Self-Objectification

Scores

On average, participants completed 8.75 statements out of 10 possible response options (79.23% completed all 10 statements). Percentages of statements made in each category can be found in Table 4. Self-objectification score was calculated by summing the number of statements categorized as relating to body shape and size, appearance, and physicality. For each analysis involving this dependent measure (TST), two sets of analyses were used, one using a nonparametric approach (Kruskal-Wallis test), the other parametric (ANOVA). The Kruskal-Wallis test was run to investigate whether there were differences in state self-objectification scores after exposure to the different *Instagram* image conditions. Each participant's sum of self-objectifying statements (e.g., statements categorized relating to body shape and size, appearance, or physicality), was entered as the dependent variable, and experimental image condition was entered as the grouping variable. A statistically significant main effect of image exposure on state self-objectification score emerged ($\chi^2 = 30.33, p < .001, \epsilon^2 = .141$). Dwass-Steel-Critchlow-Fligner pairwise comparisons were run which exposed a significant difference between those who viewed the BP and AN images ($W = -7.171, p < .001$), and those who viewed the MI and AN images ($W = -6.894, p < .001$), which supported Hypothesis 3.

Similarly, a one-way ANOVA (Welch's) for parametric data was run to investigate whether there were differences in state self-objectification scores after exposure to the different *Instagram* image conditions. Each participant's sum of self-objectifying statements (e.g., statements categorized relating to body shape and size, appearance, or physicality), was entered as the dependent variable, and experimental image condition was entered as the grouping variable. Shapiro-Wilk normality test and Levene's Homogeneity of Variance tests were run to

ensure that the data met the assumptions of ANOVA. Both assumptions were violated. The sum of self-objectifying statements was normalized using a log transformation, and the transformed variable was used in the ANOVA. In the re-run ANOVA using the transformed sum of self-objectifying statements, the Shapiro-Wilk normality test was still violated but the Levene's Homogeneity of Variance of test was not.

The one-way ANOVA (Welch's) for parametric data demonstrated a statistically significant main effect of image exposure on self-objectification score emerged, $F(2, 130) = 18.5, p < .001$. Tukey's post hoc tests revealed a significant mean difference between those who viewed the BP and AN images, and those who viewed the MI images and the AN images, which supported Hypothesis 3. As predicted, those in BP condition reported higher state self-objectification ($M = 2.80, SD = 2.25$) than those in the AN condition ($M = .96, SD = 1.39$). As predicted (based on previous findings by Cohen et al., 2019a), there was no significant difference in state self-objectification score between those in the BP condition and those in the MI condition ($M = 2.79, SD = 2.35$).

As an exploratory analysis, a one-way ANOVA (Welch's) was run with on an alternative computation of the sum of self-objectifying statements (body shape and size + appearance statements). This was done due to the different operationalization of self-objectification scores seen in the literature (Harper & Tiggemann, 2008). This analysis was run with the transformed data; Homogeneity of Variance assumption was not violated, the Shapiro-Wilk Normality Test was violated.

A statistically significant main effect of image exposure on self-objectification score emerged, $F(2, 103) = 5.81, p < .004$. Tukey's post hoc tests revealed a significant mean difference between those who viewed the BP ($M = 1.87, SD = 1.79$) images and the AN

($M = .663$, $SD = 1.22$) images, and those who viewed the MI ($M = 1.72$, $SD = 1.74$) images and the AN images, which supported Hypothesis 3. When defined as the sum of statements related to body shape and size and appearance, there was still no significant difference between those who view BP images and those who viewed MI images, relative to the original summed score of statements made related to body shape and size, appearance, and physicality.

Valence

Two separate Kruskal-Wallis tests were run to investigate whether there were differences in the use of positively and negatively valenced words used to respond to the state self-objectification measure. A statistically significant main effect of image exposure on use of positively valenced words emerged ($\chi^2 = 8.46$, $p = .015$, $\epsilon^2 = .048$). Dwass-Steel-Critchlow-Fligner pairwise comparisons were run which exposed a significant difference in the use of positively valenced words between those who viewed the BP and AN images ($W = -3.85$, $p = .018$), and those who viewed the MI and AN images ($W = -3.56$, $p = .032$). For negatively valenced words, the Kruskal-Wallis test revealed that there was not a statistically significant main effect of image exposure ($\chi^2 = 5.14$, $p = .077$, $\epsilon^2 = .062$). This showed no support for Hypothesis 4 regarding use of negatively valenced scores.

These results were corroborated by two separate one-way ANOVA (Welch's) for parametric data, which were run to investigate whether there were differences in the use of positively and negatively valenced words used to respond to the state self-objectification measure. The data were normalized using a log transformation. Each participant's sum of positively and negatively valenced self-objectifying statements (e.g., statements categorized relating to body shape and size, appearance, or physicality), was entered as the dependent variable, and experimental image condition was entered as the grouping variable. It should be

noted that the Shapiro-Wilk normality test was still violated by each ANOVA, and Levene's Homogeneity of Variance test was violated by the neither.

For positively valenced words a statistically significant main effect of image exposure emerged, $F(2, 111) = 5.81, p < .004$. Tukey's post hoc tests revealed a significant mean difference between those who viewed the BP and AN images, and those who viewed the MI and the AN images, which partially supported Hypothesis 4. As predicted, those in the BP condition used more positively valenced words to describe their bodies ($M = 1.52, SD = 1.54$) than those in the AN condition ($M = .654, SD = .911$). However, contrary to Hypothesis 4, there was no significant difference in use of positively valenced words between those in the BP condition and those in the MI condition ($M = 1.23, SD = 1.56$). For negatively valenced words a statistically significant main effect of image exposure emerged, $F(2, 44) = 3.42, p = .042$. However, Tukey's post hoc tests revealed that there was no significant mean difference in the use of negatively valence words across images conditions, which showed no support for Hypothesis 4 regarding use of negatively valenced scores.

Discussion

The goal of the current study was to assess whether men's exposure to *Instagram's* body positive versus muscular ideal images was associated with differences in participants' reported levels of positive and negative state mood, body dissatisfaction, and state self-objectification. Although women's susceptibility to the effects of media images have been studied rather extensively (Andrew et al., 2016; Cohen & Blaszczynski, 2015; Cohen et al., 2019a; Cohen et al., 2017; Cragg et al., 2019; Daniels, 2009; Harper & Tiggemann, 2008; Selensky & Carels, 2021; Silverstein et al., 1986), this investigation filled a gap in the body image literature by being one of the first to examine how men's body positive content on *Instagram* impacts men who use

the social networking site. The study was tailored after Cohen et al. (2019a), who found that body positive messaging favorably impacted women relative to more traditional feminine ideal media messaging.

State Mood

Only men who saw images that displayed the muscular ideal reported experiencing a significant decrease in positive state mood from Time 1 to Time 2, as predicted. This is a similar pattern to what Cohen et al. (2019a) reported for the women who viewed the thin-ideal images. However, in the current study, men who viewed images that were body positive and appearance neutral did not report experiencing a significant change in positive mood during this time interval. Current results were a departure from what Cohen et al. (2019a) reported, who found that women exposed to body positive images or images that were unrelated to body experienced an increase in positive mood.

Contrastingly, only men who viewed appearance neutral images reported experiencing a significant decrease in negative state mood from Time 1 to Time 2, which partially supported the predictions. Again, this is similar pattern to what Cohen et al. (2019a) reported as women who viewed appearance neutral images reported decreased negative mood, as well as consistent with previous literature suggesting that exposure to nature promotes physical and mental health, and well as social well-being (see Abraham et al., 2010 for review). For example, looking at nature can replace negative thoughts and feelings a person is experiencing with more positive feelings like interest in the environment (Hartig et al., 1996). However, contrary to prediction, no differences emerged across time on negative mood reports for men who saw either body positive or muscular ideal images. These results contrast with those reported by Cohen et al. (2019a);

those in the body positive condition reported a decrease in negative mood while those in the thin-ideal condition reported an increase in negative mood.

Body Dissatisfaction

As predicted, men who viewed muscular ideal images reported experiencing the highest body dissatisfaction relative to men who viewed body positive or appearance neutral images. Recall that Cohen et al. (2019a) found that women who viewed images promoting the thin-ideal had the lowest levels of body satisfaction measured after viewing the images. However, contrary to predictions and Cohen et al.'s (2019a) findings, body positive messaging for men did not serve to reduce body dissatisfaction relative to those who viewed images unrelated to male appearance. It is possible that both types of media images served as distractors for men to redirect focus away from body dissatisfaction for different reasons. Swami et al. (2016) found that increased exposure to nature positively correlated to increased levels of body appreciation and self-esteem in men. Perhaps photographs depicting nature scenes evoke a similar effect, and mimic some of the benefits of spending time in nature for body image and appreciation. Images that promote men's bodies to deviate from the muscular ideal did not appear to have a protective effect beyond the control images. This may be because images with a body positive message still focus on the bodies of those in the photo. This could cause the viewer to engage in body comparison with the target that may mitigate the overall purpose of body positive media, which is to improve one's relationship with their body (Tylka & Wood-Barcalow, 2015). What is clear is that muscular ideal images have a detrimental effect on men's body satisfaction.

Self-Objectification

As anticipated, the sample of men who viewed appearance neutral images reported experiencing the least amount of state self-objectification according to the TST. Also, in line

with my prediction, those exposed to the muscular ideal and body positive images made more statements that emphasized their body shape and size (e.g., “I am fat,” “I am a medium”), appearance (e.g., “I am attractive,” “I am covered in acne”), and physicality (e.g., “I am an athlete,” “I am weak”). These findings suggest that looking at images of other people’s bodies, whether they were consistent with the muscular-ideal for men or not, induced more awareness of their own bodies, and therefore high state self-objectification levels. Again, findings mirror those of Cohen et al. (2019a), who found that women exposed to either type of body-related messaging, whether positive or idyllic, completed *I am* statements that demonstrated more objectified phrasing than those who saw neutral messaging. While this may seem counterintuitive, media messaging focused on body appearance may induce viewers to have thoughts about their own body, appearance, and physicality. However, due to the different messages that the photo promotes – whether it be to attain an idyllic body figure or to be positive about their body as is – the thoughts that the different images generate may have different emotional tones. Therefore, it makes sense that images focused on other’s body would cause men to think about their own bodies but that those thoughts would be more positive for men who viewed body positive images compared to men who viewed images that promoted a culturally idealized body type.

As expected, men who viewed body positive images used the most positively valenced words to describe their body shape and size, appearance, and physicality relative to men who viewed appearance neutral images. However, contrary to predictions, there was not a meaningful difference in the amount of positively valenced words used by men who viewed body positive images and muscular ideal images. This was contrary to the findings published by Cohen et al. (2019a) who found that participants in the body positive condition used more positively valenced

words to their bodies compared to women in the thin-ideal condition. Cohen et al. (2019a) did not report the amount of positively valenced words used by those in the appearance neutral condition. In terms of negatively valenced words, there did not appear to be a meaningful difference in usage between men who viewed body positive and muscular ideal images. Cohen et al. (2019a) also did not report frequency of negatively valenced words used by those in either the body positive, appearance, or thin-ideal conditions, so comparisons to this sample are not possible.

Limitations and Future Directions

This design of this study, for understandable reasons, was modeled after Cohen et al.'s (2019a) study of body positivity influence on women. For replication purposes, it was considered important to incorporate the measures used by Cohen et al. (2019a). Among those measures was the VAS (Cohen et al., 2019a) to measure positive and negative state. However, the construct validity of this measure may be questionable. To the best of the author's knowledge, there has only been one construct validation study conducted with this measure (Luria, 1975). Since veracity of results hinges on the validity of measurement (Flake et al., 2017), it is recommended that future studies use measures that have been previously validated with the population of interest.

In replicating the methodology used by Cohen et al. (2019a), images were presented within the *Instagram* frame but without showing the *comments* or *likes* on the photo. I choose to do this to increase the ecological validity of the study by increasing the similarity to how participants would see the image on *Instagram* itself while keeping internal control high by not having different *comments* and *likes* on each photograph within the study. One effort made to increase the ecological validity of the current study was the inclusion criteria of participants who had an

active *Instagram* account.² This was an important addition to the methodology to ensure participants from the target population, and population of which the research would be relevant, were recruited.

Images were carefully matched between the body positive and the muscular ideal conditions based on similarities (e.g., positioning, background, photo orientation). Nevertheless, these similarities between photos across conditions were still relatively small. For example, the backgrounds of images in the muscular ideal condition more frequently display exercise equipment relative to the images in the body positive condition. Additionally, when comparing those pictured in the muscular ideal condition to those pictured in the body positive condition, only two of the men featured in the muscular condition are smiling. Most of the men in these photos are scowling or looking at or away from the camera with a serious expression. In contrast, most of the men featured in the body positive images are smiling. The overall tone conveyed by the two image conditions is contrasting, which could act as a confound when using this methodology. Future researchers may want to consider taking their own images in order to manipulate and control the body position, background, and expression on the face of the person being featured. These efforts will help increase the study's internal validity.

The study made a conscious effort to keep diversity at the forefront of its design. In this way, in both the body positive and muscular ideal conditions, I attempted to gather and include photos within the study that showed men of different races, ethnicities, and health conditions. The body positivity movement has previously been criticized for its lack of diversity and inclusivity (Lazuka et al., 2020). That being said, the body positivity images focused on showcasing positivity for heavy set men. I recognize that men commonly experience body shame when they are below average weight or seen as skinny (Cafri et al., 2005), however photos were not

³ This statement contains an error in the sample description. While participants were screened for previous *Instagram* usage and account possession, the authors are unsure of how recently participants last logged into the social networking site.

inclusive of this end of the weight spectrum. I thought the body positive message might have been more confusing to participants if showing multiple body types compared to one body type commonly depicted in body positive media. Additionally, the bulk of body positive messaging targets women (Cohen et al., 2019b; Lazuka et al., 2020). In a content analysis of body positive posts on *Instagram*, only 5.85% of these types of posts featured men (Cohen et al., 2019b). It may be the case that men are not familiar with body positive that targets their gender since there is relatively little of it. Future studies should explore the impact of these images on men.

Another limitation of the current study is that it did not include a manipulation check of whether participants perceived that these images corresponded to their intended image categorization, although the pilot study should alleviate some of these concerns. Concurrently, my procedures resembled those of Cohen et al.'s (2019a) investigation with women. I agree with recommendations for manipulation checks to be included in psychological research studies to ensure that independent variables are construct valid (Simons & Holcombe, 2014). When specifically considering future studies investigating body positive vs muscular idealized content, it may be helpful to include a question at the end asking participants if they thought the manipulated variable (whether that be photos, videos, etc.) aligned with the muscular ideal, body positivity, or neither. If this method is to be used, definitions of body positivity and the muscular ideal would need to be provided with the answer choices so that participants could make an accurate informed decision.

Though this study was based on Cohen et al.'s (2019a) study with women, readers should be cautious when directly comparing the current study's results with their findings. Though this study recruited participants from the same age range as Cohen et al., the mean age of men in this study was 24.6 years old ($SD = 3.4$) while the mean age of women in their study was 21.69

($SD = 3.49$). Since Cohen et al.'s sample of women were younger, they may have been more familiar with *Instagram* and the people depicted in those images, which may have influenced responses. Similarly, men in this study had a mean BMI of 25.0 ($SD = 5.36$) compared to 23.08 ($SD = 3.90$) for their women. According to the Centers for Disease Control and Prevention (2022), the average BMI of the men in the current study was in the overweight range, while the average BMI of women in Cohen et al.'s study was in the healthy range. These differences may have influenced the way the images were perceived in the different studies, as well as reports of such things as body dissatisfaction.

Finally, it should not be overlooked that this is one of the first studies in this area with men. Due to this, there are no other studies with which to compare the results. Since this is the case, it is necessary that this area continue to be investigated, and that authors seek publication even if results are not significant. This allows for more accurate estimation of the true effect size in future meta-analytic studies (Kvarven et al., 2020; LeBel et al., 2019). Furthermore, discrepancies in how self-objectification is calculated can lead to further confusion in published research. It is my opinion that if the TST were to be used in future studies, a total self-objectification score should be calculated based on the sum of statements relating to body shape and size, appearance, and physicality (the method used by Daniels, 2009), rather than omitting the latter set of statements. Since men are exposed to the muscular ideal, an idyllic figure that promotes extensive muscularity and strength (Grieve, 2007), they may be primed to think about physical ability. If physicality was not considered a piece of men's self-objectification it could lead to a gap in understanding how media's promotion of the muscular ideal fully impacts men.

Conclusion

To the best of my knowledge, this study was the inaugural investigation for the impact of body positive media on men's body image. The findings suggest that media with a body positive message does not negatively impact men's body image. However, it does not seem to markedly improve their body image either. This finding was inconsistent with previous findings with women (Nelson et al., 2022). Consistent with previous findings (Cohen et al., 2019a), men who viewed media that promoted a body positive and muscular idealized message reported higher amounts of state self-objectification, suggesting that viewing images of other's bodies may cause an individual to engage in self-objectification, even if those bodies do not conform to the normative standard. Overall, this study suggests that muscular ideal images may be particularly threatening to men's body image, whereas viewing body positive may not have a (strong) influence over men's body image. As the first study to examine the effects of body positive media on men, there is a severe need for more research on this important topic.

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Table 1

Correlations, Means, and Standard Deviations for Positive State Mood, Negative State Mood, Body Dissatisfaction, State Self-Objectification, and BMI.

	1	2	3	4	5	6
1. Positive State Mood	-					
2. Negative State Mood	-.413***	-				
3. Body Dissatisfaction	-.244***	.211***	-			
4. Sum of Beauty Statements	-.024	.037	.114*	-		
5. Sum of Physicality Statements	.064	-.030	-.091	.242***	-	
6. BMI	-.056	.081	.280***	-.060	-.067	-
Mean	58.9	24.1	2.72	1.42	.767	25.0
Standard Deviation	23.6	21.5	.761	1.69	1.08	5.36
Minimum	0	0	1.00	0	0	11.8
Maximum	100	100	5.00	9.00	4	57.6

Note. * $p < .05$; ** $p < .01$; *** $p < .001$.

Table 2

Post hoc Comparisons (Mean Difference, Standard Estimates, and p-values) for the Interaction of Time (Pre- vs. Post Manipulation) and Image Condition (BP vs. MI vs. AN) on Positive Mood.

Time	Condition		Time	Condition	Mean difference	SE
1	Body positive	–	1	MI	-1.83	3.08
		–	1	AN	1.80	3.09
		–	2	BP	-.529	1.12
	Muscular ideal	–	2	MI	3.70	3.17
		–	2	AN	1.23	3.19
		–	1	AN	3.63	3.07
		–	2	BP	1.30	3.17
		–	2	MI	5.52***	1.11
		–	2	AN	3.06	3.17
	Appearance neutral	–	2	BP	-2.33	3.19
		–	2	MI	1.89	3.16
		–	2	AN	-.573	1.12
2	Body positive	–	2	MI	4.23	3.26
		–	2	AN	1.76	3.28
	Muscular ideal	–	2	AN	-2.47	3.26

Note. $df = 308$ for all analyses. * $p < .05$; ** $p < .01$; *** $p < .001$.

Table 3

Post hoc Comparisons (Mean Difference, Standard Estimates, and p-values) for the Interaction of Time (Pre- vs. Post Manipulation) and Image Condition (BP vs. MI vs. AN) on Negative Mood.

Time	Condition		Time	Condition	Mean difference	SE	
1	Body positive		1	MI	-.675	3.06	
		–	1	AN	.718	3.07	
		–	2	BP	1.55	.891	
		–	2	MI	-1.27	3.02	
			–	2	AN	3.79	3.03
	Muscular ideal	–	1	AN	1.39	3.05	
		–	2	BP	2.22	3.02	
		–	2	MI	-.593	.878	
		–	2	AN	4.46	3.01	
	Appearance neutral	–	2	BP	.829	3.03	
		–	2	MI	-1.99	3.01	
		–	2	AN	3.07**	.887	
2	Body positive	–	2	MI	-2.82	2.98	
		–	2	AN	2.24	2.99	
	Muscular ideal	–	2	AN	5.06	2.97	

Note. $df = 308$ for all analyses. * $p < .05$; ** $p < .01$; *** $p < .001$.

Table 4

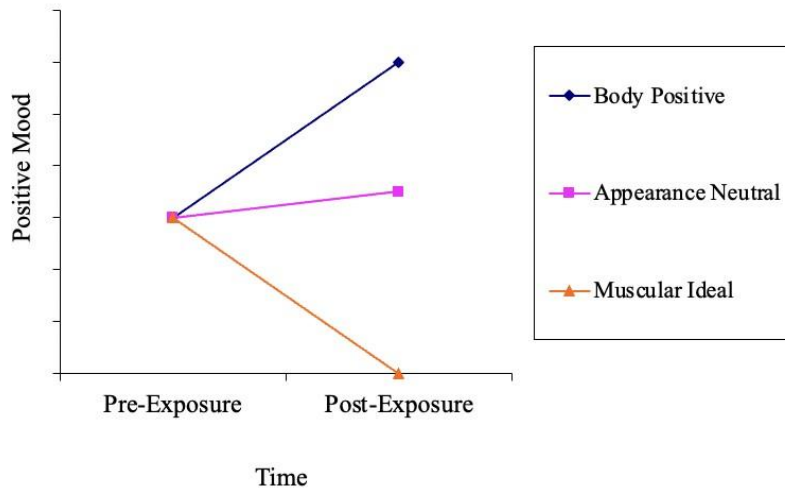
Percentages for the Number of Statements Made in each Category of the Ten Statements Test.

	Muscular Ideal	Body Positive	Appearance Neutral	Total
Body Shape and Size	4.29%	4.50%	1.54%	10.75%
Appearance	2.36%	2.47%	.96%	6.04%
Physicality	4.14%	3.47%	1.14%	8.97%
Traits/Roles	11.75%	12.97%	16.76%	41.84%
Hobbies/Political Affiliations	0%	.036%	.107%	.14%
States/Emotions	10.3%	8.97%	12.4%	32.44%

Note. Percentages were calculated based on the total number of statements made (2799).

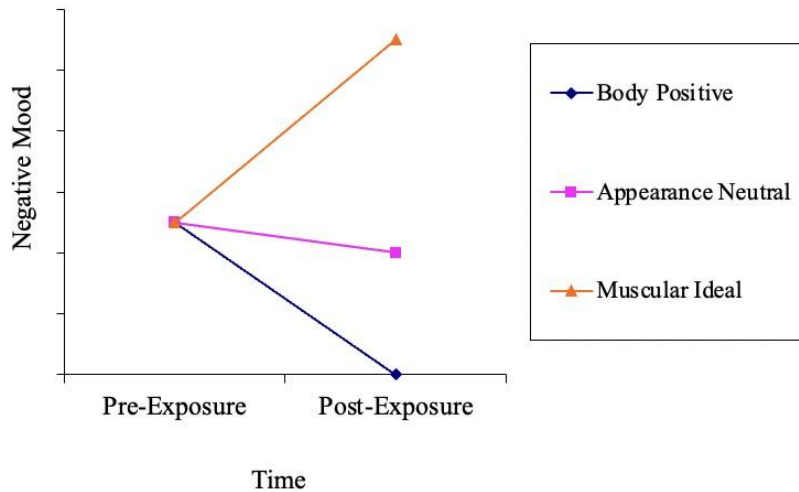
Figure 1

Hypothesized Positive State Mood as a Function of Condition



Note. This figure demonstrates the predictions made by Hypothesis 1 regarding positive mood.

Hypothesized Negative State Mood as a Function of Condition



Note. This figure demonstrates the predictions made by Hypothesis 1 regarding negative mood.

Figure 2

Post hoc Marginal Means Comparisons for the Interaction of Time (Pre- vs. Post Manipulation) and Image Condition (BP vs. MI vs. AN) on Positive Mood.

Time * Experimental_Condition

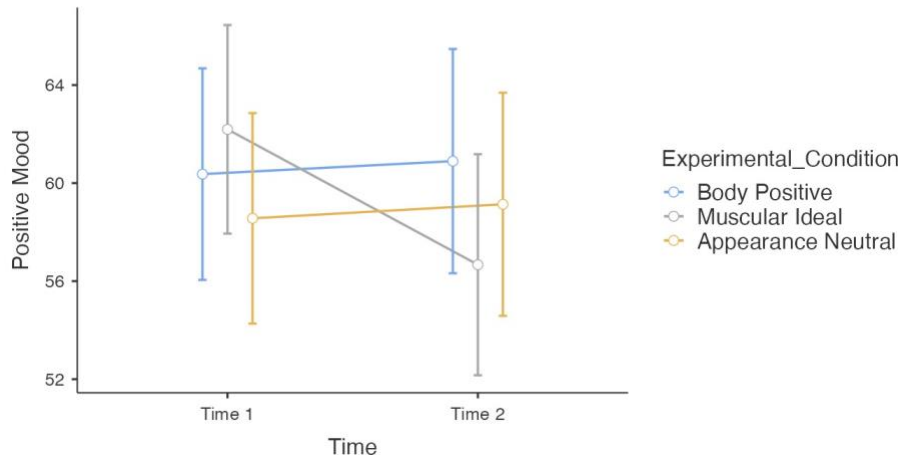
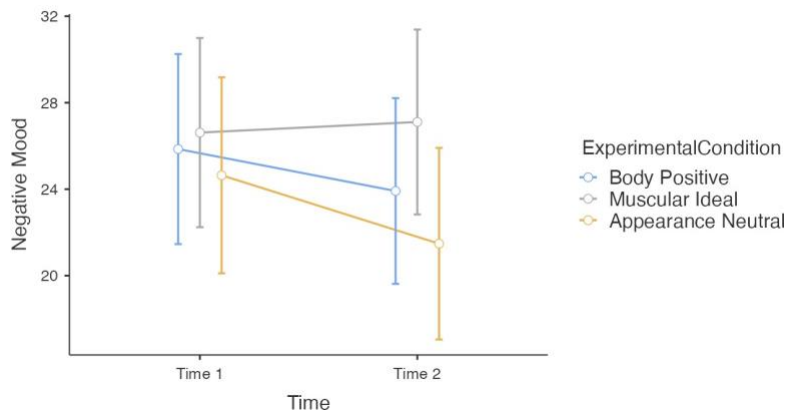


Figure 3

Post hoc Marginal Means Comparisons for the Interaction of Time (Pre- vs. Post Manipulation) and Image Condition (BP vs. MI vs. AN) on Negative Mood.

Time * ExperimentalCondition



Appendix A

Institutional Review Board Approval

From: do-not-reply@cayuse.com
Subject: HS-22-48 - Initial: Expedited Approval
Date: July 28, 2022 at 4:40 PM
To: bazzinidg@appstate.edu, prowtsend@appstate.edu



To: Skyler Prowten, Skyler Prowten
Department: 250800-Psychology, Graduate Students

Re: HS-22-48 - Initial: Expedited Approval

STUDY #: HS-22-48

STUDY TITLE: Impact of Instagram's Body Positive vs Muscular Ideal Images on Men's Body Image

EXPEDITED CATEGORY: 7. Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

APPROVAL DATE: July 28, 2022

The Institutional Review Board (IRB) approved this study. The IRB found that the research procedures carry no more than minimal risk and meet the expedited category or categories cited above. This approval applies to the life of the study, and you do not need to submit an annual request for renewal. You are required to request approval for any changes you may make to the study in the future as described in our [Standard Operating Procedure #4](#). Changes are not permitted to be made to research procedures or study documents prior to receiving IRB approval, unless changes are necessary to eliminate immediate hazards to participants.

The IRB determined that this research poses no greater than minimal risk to participants.

The IRB determined that a waiver of written documentation of consent is appropriate for this study. This research does not involve any procedures for which written consent is normally required outside the research context, and so is eligible for a waiver of written documentation of consent in accordance with 45 CFR 46.117(c)(1)(ii).

The IRB determined, in accordance with 45 CFR 46.116(f)(2), that an alteration of the elements of consent required under 45 CFR 46.116(b) is appropriate for this study. The research could not practicably be carried out if the participants were prospectively informed of the true purpose of the research, as the potential for priming effects would affect the integrity of the data. This alteration will not adversely affect the rights and welfare of the participants, and participants will be provided with additional pertinent information after participation.

IRB approval is limited to the activities described in the IRB approved materials. All approved documents for this study, including consent forms, can be accessed through Cayuse.

Approval Conditions:

Appalachian State University Policies: All individuals engaged in research with human participants are responsible for compliance with the University policies and procedures, and IRB determinations.

Principal Investigator Responsibilities: The PI should review the IRB's list of PI responsibilities. The Principal Investigator (PI), or Faculty Advisor if the PI is a student, is ultimately responsible for ensuring the protection of research participants; conducting sound ethical research that complies with federal regulations, University policy and procedures; and maintaining study records.

Modifications and Addendums: IRB approval must be sought and obtained for any proposed modification or addendum (e.g., a change in procedure, personnel, study location, study instruments) to the IRB-approved protocol and informed consent form before changes may be implemented, unless changes are necessary to eliminate apparent immediate hazards to participants. Changes to eliminate apparent immediate hazards must be reported promptly to the IRB.

Post-Approval Monitoring (PAM): The PI is responsible for providing requested documentation and/or in-person review time of the study by the Office of Research Protections if this study is selected for a Post-Approval Monitoring Review.

Prompt Reporting of Events: Unanticipated Problems involving risks to participants or others; serious or continuing noncompliance with IRB requirements and determinations; and suspension or termination of IRB approval by an external entity, must be promptly reported to the IRB.

Closing a study: When research procedures with human subjects are completed (including the destruction of all identifiable information collected for research purpose), please submit a closure form in Cayuse.

Websites:

1. PI responsibilities: <http://researchprotections.appstate.edu/sites/researchprotections.appstate.edu/files/PI%20Responsibilities.pdf>
2. IRB forms: <http://researchprotections.appstate.edu/human-subjects/irb-forms>

Appendix B

Revised Male Body Attitudes Scale (MBAS-R)

Items

Muscularity

1. I think I have too little muscle on my body.
2. I think my legs are not muscular enough.
3. I think my arms should be more muscular.
4. I feel embarrassed about my muscularity.
5. I think my back should be more muscular.
6. I think my chest should be more muscular.
7. I feel satisfied with my muscularity.*

Body Fat

8. I think my body should be leaner.
9. I think I have too much fat on my body.
10. Eating sweets, cakes, or other high calorie food makes me feel fat.
11. I feel excessively fat.
12. Seeing my reflection (e.g., in a mirror or window) makes me feel badly about my body fat.

Height

13. I wish I were taller.
14. I am satisfied with my height.*
15. I feel ashamed of my height.

Note. *Reverse scored item.

Participants indicate how characteristic each statement is on a Likert-type scale ranging from 1 (*not at all*) to 5 (*extremely*).

Appendix C

State Mood Scale for Positive and Negative Mood

Items

Positive State Mood

1. Confident
 2. Happy
- 

Negative State Mood

3. Depressed
4. Anxious

Note. Participants were asked to indicate how they feel ‘right now’ by moving a marker across a horizontal line that ranges from 0 (not at all) to 100 (very much) across each of the mood dimensions.

Appendix D

Ten Statements Test

Participant Instructions: Viewing photos can have an impact on how people view themselves. Please take a moment to think about how looking at the images made you feel about yourself and who you are. In the 10 blanks below, please make up to 10 different statements about yourself and who you are that complete the sentence, "I am ____." Complete the statements as if you were describing yourself to yourself, not somebody else.

1. "I am _____."
2. "I am _____."
3. "I am _____."
4. "I am _____."
5. "I am _____."
6. "I am _____."
7. "I am _____."
8. "I am _____."
9. "I am _____."
10. "I am _____."

Vita

Skyler Diane Prowten was born in Ravenna, Ohio, to Pamela Prowten. She graduated from Theodore Roosevelt High School in Kent, Ohio, in June 2015. The following autumn, she entered North Carolina State University to study Psychology and Animal Science, and in May 2019 she was awarded a Bachelor of Arts and Bachelor of Science degree. In the fall of 2021, she accepted a research assistantship in Psychology at Appalachian State University and began study toward a Master of Arts degree. The M.A. was awarded in May 2023.