AMERICAN PSYCHOLOGICAL ASSOCIATION

Stigma and Health

ISSN: 2376-6972

2022, Vol. 7, No. 2, 226–233
https://doi.org/10.1037/sah0000367

The Impact of Curvy Fitspiration and Fitspiration on Body Dissatisfaction, Negative Mood, and Weight Bias in Women

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Exposure to fitspiration (images of thin, active women) on Instagram has been shown to be associated with body dissatisfaction, but fitspiration's effect on weight bias has not been studied. The impact of curvy fitspiration (images of higher weight, active women) also has not been explored. The present study aim was to investigate the impact of curvy fitspiration and fitspiration on body dissatisfaction, negative mood, and weight bias. Participants included 178 women from the general population who were randomly assigned to three groups: curvy fitspiration, fitspiration, or control (travel). Participants completed measures of body dissatisfaction, negative mood, and weight bias before and after exposure to the images. Body dissatisfaction and weight bias decreased in the curvy fitspiration group, and the curvy fitspiration group had lower negative mood and weight bias than the fitspiration group postexposure. Body dissatisfaction and weight bias did not change in the fitspiration group, but negative mood increased. Body dissatisfaction and negative mood decreased in the control group, and the control group had lower body dissatisfaction and weight bias than the fitspiration group postexposure. These results suggest that increasing representations of diverse body types on Instagram could be beneficial in reducing body dissatisfaction and weight bias in women.

Keywords: body dissatisfaction, weight bias, fitspiration, curvy, social media

Body dissatisfaction is a common concern among women across the life span (Carrard et al., 2021; Stutts & Blomquist, 2021). This prevalence is problematic because body dissatisfaction is associated with higher levels of disordered eating (Gitimu et al., 2016; Wolfe & Hewitt, 2016). Furthermore, body dissatisfaction is associated with negative psychological functioning such as higher depressive symptoms (Carrard et al., 2021; Sharpe et al., 2018). As such, it is important for research to examine what factors contribute to body dissatisfaction.

One way that body dissatisfaction is perpetuated in our society is through exposure to idealized media images (Want, 2009). One popular social media site is Instagram, which allows people to connect by sharing photos and videos. Auxier and Anderson (2021) found that 40% of adults in the U.S. indicated that they used Instagram and that Instagram was used more commonly among women than men. One particular type of Instagram image that can have negative effects on women's body image is called "fitspiration" or fitness inspiration (Tiggemann & Zaccardo, 2015). Fitspiration typically includes images of women with fit, thin bodies who are wearing workout clothes and/or engaging in fitness activities (Carrotte et al., 2017). Fitspiration is highly prevalent; as of December 2021, there were over 19.5 million #fitspiration posts on Instagram. Previous research found that fitspiration has negative effects on women's body image (Prichard et al., 2017; Rounds & Stutts, 2021; Tiggemann & Zaccardo, 2015). For example, one study examined the effects of viewing all fitspiration images, half fitspiration and half travel images, or all travel images (Rounds & Stutts, 2021). This study found that body satisfaction decreased after exposure to fitspiration, even when only half of the images were fitspiration images.

Since body dissatisfaction is related to higher depressive symptoms (Carrard et al., 2021; Sharpe et al., 2018), many studies have also examined the effect of fitspiration on negative mood. For example, Prichard et al. (2017), Rounds and Stutts (2021), and Tiggemann and Zaccardo (2015) found that negative mood increased after exposure to fitspiration. Research has found that although the relationship between body dissatisfaction and mood is bidirectional, body dissatisfaction more dominantly contributes directly to depressive symptoms in young women (Sharpe et al., 2018). Therefore, mood is an important outcome variable to examine in this research.

Following the #fitspiration movement, active individuals of higher weight have created alternate hashtags on Instagram called #curvyandfit and #curvyyoga (Webb et al., 2019). The curvy fitspiration movement on Instagram continues to grow, though it has not reached the level of popularity of fitspiration. As of December 2021, #curvyandfit had approximately 164,000 posts on Instagram while #curvyyoga had around 195,000 posts. Although there is minimal research surrounding the impact of exposure to different body shapes on women through social media, one study found that viewing any type of "ideal" body type (thin, curvy, and athletic) caused increased state social comparisons which resulted in decreased body appreciation and body esteem (Betz et al., 2019). However, the images used in that study were static images of women in bikinis rather than being active/working out, and all women were of an "ideal" type. For example, the thin

This article was published Online First February 24, 2022.
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This work was supported by the Faculty Study and Research Grant and the Davidson Research Initiative at Davidson College.
We have no conflicts of interest to disclose.
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ideal was the typical thin body type, the athletic ideal was a thin but toned body, and the curvy ideal was a heavier body type (compared to the thin) with an hourglass figure. Another experimental study found that individuals exposed to "average-sized" women (images that were rated as a "3" or "4" on a scale from 1 = *extremely thin* to 5 = *extremely overweight*) had less body dissatisfaction compared to exposure to "thin-ideal" women (images that were rated as a "1" or "2" on the same scale; Tiggemann et al., 2020). However, no previous study to our knowledge has examined the effect of viewing *active* individuals of higher weight on body dissatisfaction and mood.

In addition to potentially reducing body dissatisfaction and negative mood, the curvy fitspiration movement could be a mechanism to reduce weight bias. A review study of multiple experimental studies found that biases held against people of higher weight continue to exist and perpetuate weight discrimination in multiple settings including educational institutions, healthcare organizations, and the workplace (Puhl & Heuer, 2009). However, a meta-analysis found that weight bias interventions are effective in changing weight-biased attitudes (Lee et al., 2014). Two of the main methods of intervention against weight bias that have been commonly implemented include modifying the beliefs of the causes of higher weight and changing social norms (Daníelsdóttir et al., 2010). For example, one experimental study that examined the effects of modifying beliefs found that weight bias decreased when participants were exposed to content that was counter-stereotypical (i.e., explained the uncontrollable causes of higher weight such as genetics) as opposed to content that was stereotypical (i.e., explained the controllable causes of higher weight such as overeating; Lin & Stutts, 2020). Furthermore, Smirles and Lin's (2018) experimental study found that exposure to models who were of higher weight led to decreased antifat attitudes. Another experimental study found that exposure to positive depictions of individuals of higher weight also led to lower negative attitudes toward them (Pearl et al., 2012). The present experimental study examines the impact of curvy fitspiration which aims to reduce weight bias by disrupting negative stereotypes about women of higher weight (e.g., being lazy) by including images of women who are active and of higher weight.

The Present Study

The main aim of the present study was to assess the impact of viewing curvy fitspiration and fitspiration on body dissatisfaction, negative mood, and weight bias in women in the general population as previous studies have been limited by only including college students (Dignard & Jarry, 2021; Rounds & Stutts, 2021; Tiggemann & Zaccardo, 2015). This study included three types of Instagram images: curvy fitspiration, fitspiration, and control (travel). Body dissatisfaction, negative mood, and weight bias were assessed before (preexposure) and after (postexposure) viewing the images. We hypothesized that the curvy fitspiration group would have a significant decrease in body dissatisfaction, negative mood, and weight bias and would have lower body dissatisfaction, negative mood, and weight bias than the fitspiration group postexposure. In contrast, we hypothesized that the fitspiration group would have an increase in body dissatisfaction, negative mood, and weight bias and would have higher body dissatisfaction, negative mood, and weight bias than the curvy fitspiration group and the control group postexposure. We did not predict any changes in the control group.

Method

Participants

Participants included 178 adults from the general public using Prolific. Prolific is an online data collection platform (https://www.prolific.co/). All participants met the following inclusion criteria: were at least 18 years old, identified themselves as women, lived in the United States, had English as their first language, and had at least a 95% acceptance rate of surveys with Prolific. Similar to Betz et al. (2019), we did not restrict age in our recruitment in order to increase the generalizability of the findings. Using a G*power analysis with an effect size f^2 of 0.25, a p value of .05, and a power value of .90, we needed 153 participants to have sufficient power for the analyses in this experimental study (Faul et al., 2009). However, to account for attrition and based on our amount of funding to pay participants, 188 participants were recruited. A total of 188 participants attempted the survey, but 10 were excluded for not completing the survey (had greater than 50% of data missing), resulting in 178 participants. Ninety-nine percent of our data was complete. Any missing data was about a sensitive question (e.g., weight); therefore, we did not impute that data, and those individuals (e.g., two for BMI) were not included in analyses including that variable. We had sufficient power to conduct our analyses.

Procedure

This study was approved by the Institutional Review Board, and we collected data in the summer of 2021. Individuals viewed an advertisement through Prolific which indicated that the survey was about body image, social media, and health. Participants who consented to completing the survey first completed a questionnaire on weight/shape concerns they have had in the past month. Subsequently, they completed three measures prior to exposure to the Instagram images: state body dissatisfaction, state negative mood, and weight bias. Participants were then randomly divided into three groups: curvy fitspiration, fitspiration, or control (travel). Each group viewed a composite image containing 20 images from Instagram (see Instagram Images section). This composite image simulated Instagram such that it had the number of posts, number of followers, and number following at the top of the composite image; the same numbers were used for each condition. Next, each image was shown individually on a separate page similar to how one would view individual images on Instagram. Participants were asked "to describe the picture in a phrase" after viewing them in order to ensure attention toward the images. Subsequently, they completed the same three measures that they completed prior to exposure: state body dissatisfaction, state negative mood, and weight bias. Finally, they provided demographic information. The survey took an average of 14.67 min, and participants were compensated $3.00, which is considered excellent compensation in the Prolific system.

Instagram Images

The images assessed were found by searching the corresponding hashtags on Instagram: #curvyandfit or #curvyyoga for the curvy fitspiration group, #fitspiration for the fitspiration group, and #travel for the control group. The fitspiration images had to include a woman who was engaging in exercise or wearing work-out clothes and appeared thin and toned (e.g., visible muscles such as abdominal muscles), which is similar to criteria used in previous studies

(Rounds & Stutts, 2021; Simpson & Mazzeo, 2017). The same criteria were used for the curvy fitspiration images, with the modification of conforming to the curvy/higher weight body shape as opposed to the thin and toned shape. Images for the control group excluded any images that were generally recognizable as a popular tourist area to minimize any confounding variables (e.g., emotional ties to the specific location) or included any people. All authors agreed upon a total of 40 images meeting the above criteria for each of the three groups for evaluation. Within the curvy fitspiration and fitspiration group, 20 images depicted a woman of color (i.e., a woman who appeared non-White such as Black, Asian, or Hispanic/Latinx), and 20 images depicted a White woman. We wanted to include a diversity of women to reflect the types of images viewed and to minimize any effects associated with only viewing one race. Within the control group, 20 images depicted land, and 20 images depicted water.

The images were then coded independently by three individual raters. For the curvy fitspiration and fitspiration images, raters identified the race of the woman, completed a visual analog scale about body size (0 = *thin* to 100 = *curvy*), and a visual analog scale about activity level (0 = *not active* to 100 = *active*). For the travel images, raters indicated if they identified this location as a landmark, completed a visual analog scale about image quality (0 = *low quality image* to 100 = *high quality image*), and completed a visual analog scale about visual appeal (0 = *low visual appeal* to 100 = *high visual appeal*). Images with inaccurate race identification or an identifiable location were excluded. Twenty curvy fitspiration images (10 displaying women of color, 10 displaying White women) were selected by choosing images that were within 1.5 *SD*s from the mean on the body size scale ($M = 76.86$, $SD = 10.97$) and the activity scale ($M = 76.33$, $SD = 9.36$). Similarly, 20 fitspiration images (10 displaying women of color, 10 displaying White women) were selected by choosing images that were within 1.5 *SD*s from the mean on the body size scale ($M = 5.52$, $SD = 2.87$) and the activity scale ($M = 73.37$, $SD = 12.11$). The scores on the quality/visual appeal for the travel images were averaged ($M = 83.87$, $SD = 9.06$). The 10 highest rated land images and the 10 highest rated water images were selected for this study. The 20 images for each group were subsequently randomized in order to reduce order effects.

Measures

Weight/Shape Concerns

Items from the weight/shape concerns subscales in the Eating Disorder Examination Questionnaire were used to assess body dissatisfaction (Fairburn & Beglin, 1994). Participants responded to eight items by rating how they felt about their weight/shape in the past 28 days (e.g., "How dissatisfied have you been with your weight?") on a scale from 0 (*not at all*) to 6 (*markedly*). The scores were averaged, and higher scores indicated higher weight/shape concerns. This measure had excellent reliability in the present study with a Cronbach's α of .91. This measure was included to obtain a general level of body dissatisfaction and to assess if there were any differences between groups before exposure to the Instagram content.

Pre–Post Exposure Measures

Three measures were included pre and postexposure to the Instagram images: state body dissatisfaction, state negative mood, and weight bias. Visual analog scales were used to assess state body dissatisfaction and negative mood. These items were adapted from Slater et al. (2017) and Rounds and Stutts (2021). We used the same three items as those studies but instead used the term "body dissatisfaction" rather than "body satisfaction" (e.g., "I am dissatisfied with my weight," "I am dissatisfied with my body shape," and "I am dissatisfied with my overall appearance"). We made this slight modification because the other two variables were negatively framed and having them all be in the same direction would make it easier to interpret the results. We slightly modified the two items used in Rounds and Stutts (2021) to be statements ("I feel depressed" and "I feel happy") rather than questions ("How depressed do you feel right now?" and "How happy do you feel right now?") as that was a similar format to the other visual analog scales and did not change the meaning. Similar to Slater et al. (2017) and Rounds and Stutts (2021), participants rated each of the items on a visual analog scale ranging from 0 (*not at all*) to 100 (*extremely*). The score for body dissatisfaction was found by taking the average across the three items (range: 0–100). The score for state negative mood was found by reverse scoring the happy item and then taking the average between the two items (range: 0–100). The Cronbach's α for body dissatisfaction was .91 preexposure and .94 postexposure. The Cronbach's α for negative mood was .74 preexposure and .68 postexposure.

The Fat Phobia Scale-Short Form, which consists of 14 pairs of adjectives (e.g., willpower vs. no willpower), was used to determine the biases present against individuals of higher weight (Bacon et al., 2001). This measure has been effectively used as a pre–post measure in another experimental study on weight bias (Lin & Stutts, 2020). The participants were given two opposing adjectives on a five-point scale and were asked which adjective best described "obese or fat people." For example, participants were given the adjectives "willpower" and "no willpower" where 1 = *willpower* and 5 = *no willpower* on the scale. Scores were averaged, and higher scores indicated higher weight bias. In the present study, we used the term "weight bias" in lieu of "fat phobia" to be more inclusive and sensitive. The Cronbach's α was .90 preexposure and .93 postexposure.

Demographic Questions

Participants indicated their age, race/ethnicity, educational attainment, and height/weight. Body mass index (BMI) was calculated using the height and weight information.

Attention Check

We included two attention checks, and only excluded data if the participant failed both attention checks. For the first attention check, an item was added at the end of one of the questionnaires ("please select not at all"). Three people did not pass the first attention check. However, we also examined their Instagram descriptions to make sure they were describing the images accurately. For example, one of the descriptions was "limber woman stretching" for a fitspiration image and "beautiful beach with clear-blue water" for a travel image. All individuals' brief statements matched the images; therefore, all individuals passed the second attention check and were included in the study.

Statistical Analyses

Descriptive statistics and correlations were conducted for all main variables. Pearson chi-squared analyses were used to examine any

demographic differences across groups (curvy fitspiration, fitspiration, and control). Between-subjects analysis of variances (ANOVAs) were conducted to examine differences across groups based on age, BMI, and weight/shape concerns. For the main analyses, 2 (preexposure and postexposure) × 3 (curvy fitspiration, fitspiration, and control) mixed ANOVAs were conducted on state body dissatisfaction, state negative mood, and weight bias. Age was not significantly correlated with any of those variables; therefore, it was not included as a covariate. BMI was significantly correlated with preexposure state body dissatisfaction ($r = .45$, $p < .001$) and weight bias ($r = .32$, $p < .001$); therefore, it was included as a covariate for those analyses. Bonferroni comparisons were used for posthoc tests. We used a p value of .05 for all analyses. SPSS version 27 was used for all analyses.

Results

Descriptive Statistics and Baseline Results

Descriptive statistics of the participants are displayed in Table 1. More than half of the participants were Caucasian and Non-Hispanic/Latinx. The average age of the participants was approximately 33 years old with ages ranging from 18 years to 77 years. Approximately 57% of participants had obtained at least a Bachelor's degree. The mean BMI was approximately 27 and ranged from 14 to 55. Participants' weight/shape concerns were on average between the scale points of "slightly" and "moderately." All of the variables were normally distributed; therefore, we did not need to eliminate outliers. Levene's Test of Equality of Variances was nonsignificant, indicating the error variance of the dependent variables was equal across groups. Therefore, the assumptions were met for the ANOVAs. There were no significant differences in demographic variables, BMI, or weight/shape concerns across the three groups prior to viewing the Instagram images (Table 1).

Effects of Time by Instagram Group

State Body Dissatisfaction

For the 2 (preexposure, postexposure) × 3 (curvy fitspiration, fitspiration, and control) mixed ANOVA for state body dissatisfaction, controlling for BMI, there was a significant interaction between time and group, $F(2, 175) = 6.24$, $p = .002$, $\eta_p^2 = .067$ (Figure 1). Posthoc tests revealed that state body dissatisfaction significantly decreased from preexposure ($M = 55.36$, $SD = 33.33$) to postexposure ($M = 48.91$, $SD = 32.96$) in the curvy fitspiration group, $p < .001$. State body dissatisfaction also significantly decreased from preexposure ($M = 50.70$, $SD = 33.05$) to postexposure ($M = 45.76$, $SD = 32.57$) in the control group, $p = .004$. In addition, the fitspiration group had significantly higher state body dissatisfaction ($M = 61.73$, $SD = 29.78$) compared with the control group postexposure ($M = 45.76$, $SD = 32.57$), $p = .02$, but there were no other group differences postexposure.

State Negative Mood

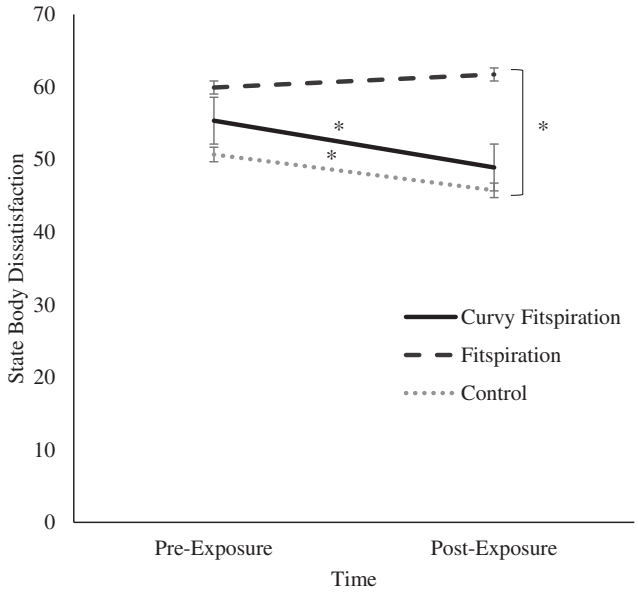
For the 2 (preexposure, postexposure) × 3 (curvy fitspiration, fitspiration, and control) mixed ANOVA for state negative mood, there was a significant interaction between time and group, $F(2, 175) = 6.13$, $p = .003$, $\eta_p^2 = .066$ (Figure 2). Posthoc tests revealed that state negative mood significantly increased from preexposure ($M = 45.56$, $SD = 24.67$) to postexposure ($M = 49.02$, $SD = 25.72$) in the fitspiration group, $p = .027$. However, state negative mood significantly decreased from preexposure ($M = 44.97$, $SD = 28.71$) to postexposure ($M = 41.42$, $SD = 28.59$) in the control group, $p = .018$. There was no significant difference between preexposure ($M = 38.74$, $SD = 22.46$) and postexposure ($M = 36.20$, $SD = 21.47$) in the curvy fitspiration group, $p = .096$. However, the curvy fitspiration group had significantly lower state negative mood ($M = 36.20$, $SD = 21.47$) compared with the fitspiration group postexposure

Table 1
Descriptive Statistics by Group

Category	Total ($N = 178$) n (%)	Curvy fitspiration group ($n = 59$) n (%)	Fitspiration group ($n = 57$) n (%)	Control group ($n = 62$) n (%)	χ^2
Race					5.49
Caucasian	130 (73.0)	45 (76.3)	44 (77.2)	41 (66.1)	
Asian/American	17 (9.6)	6 (10.2)	4 (7.0)	7 (11.3)	
African/American	14 (7.9)	5 (8.5)	2 (3.5)	7 (11.3)	
Bi/multiracial	10 (5.6)	2 (3.4)	4 (7.0)	4 (6.5)	
Not listed	7 (3.9)	1 (1.7)	3 (5.3)	3 (4.8)	
Hispanic/Latinx	15 (8.4)	2 (3.4)	5 (8.8)	8 (12.9)	3.56
Education					8.76
<High school degree	1 (0.6)	0 (0.0)	0 (0.0)	1 (1.6)	
High school degree	20 (11.2)	6 (10.2)	5 (8.8)	9 (14.5)	
Some college	55 (30.9)	22 (37.3)	18 (31.6)	15 (24.2)	
Bachelor's degree	69 (38.8)	21 (35.6)	21 (36.8)	27 (43.5)	
Master's degree	23 (12.9)	6 (10.2)	10 (17.5)	7 (11.3)	
Doctoral degree	7 (3.9)	2 (3.4)	2 (3.5)	3 (4.8)	
Not listed	3 (1.7)	2 (3.4)	1 (1.8)	0 (0.0)	
	M (SD)	M (SD)	M (SD)	M (SD)	F
Age	32.92 (12.44)	36.14 (14.82)	31.71 (10.31)	30.94 (11.26)	3.09
Body mass index	26.78 (7.47)	27.15 (7.73)	26.92 (6.92)	26.30 (7.77)	.21
W/SC	3.33 (1.49)	3.25 (1.59)	3.48 (1.27)	3.26 (1.60)	.43

Note. W/SC = weight/shape concerns.

Figure 1
State Body Dissatisfaction by Group and Time



Note. All error bars represent standard error.
* $p < .05$.

($M = 49.02$, $SD = 25.72$), $p = .022$, but there were no other significant group differences postexposure.

Weight Bias

For the 2 (preexposure, postexposure) × 3 (curvy fitspiration, fitspiration, and control) mixed ANOVA for weight bias, controlling for BMI, there was a significant interaction between time and group, $F(2, 175) = 6.23$, $p = .002$, $\eta_p^2 = .066$ (Figure 3). Posthoc tests revealed that weight bias significantly decreased from preexposure ($M = 3.25$, $SD = 0.67$) to postexposure ($M = 3.04$, $SD = 0.75$) in the curvy fitspiration group only, $p = .001$. In addition, the curvy fitspiration group had significantly lower weight bias ($M = 3.04$, $SD = 0.75$) compared with the fitspiration group postexposure ($M = 3.60$, $SD = 0.80$), $p < .001$. The control group also had significantly lower weight bias ($M = 3.23$, $SD = 0.77$) compared to the fitspiration group postexposure ($M = 3.60$, $SD = 0.80$), $p = .029$.

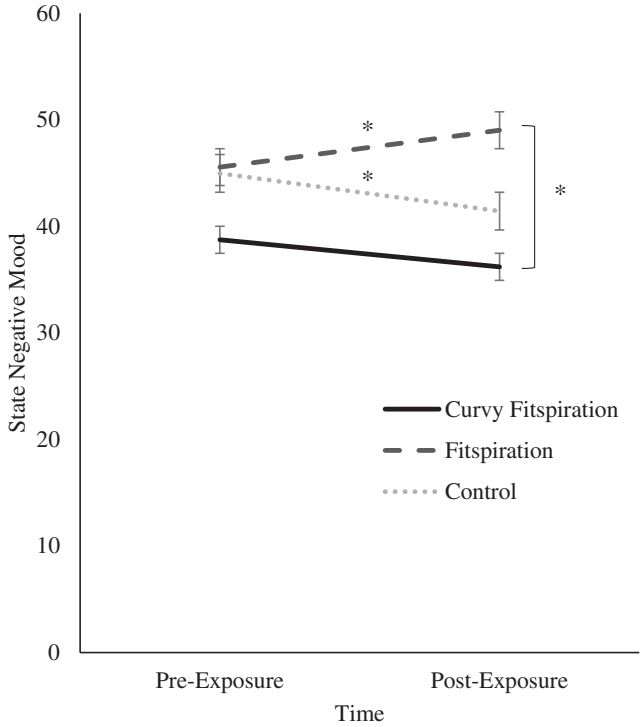
Discussion

The main aim of the present study was to investigate the impact of curvy fitspiration and fitspiration on body dissatisfaction, negative mood, and weight bias among women. Our main hypothesis was partially supported since the curvy fitspiration group showed a decrease in body dissatisfaction and weight bias after exposure to the images as well as lower state negative mood and weight bias than the fitspiration group. However, viewing curvy fitspiration content did not decrease negative mood, and viewing fitspiration content did not increase body dissatisfaction or weight bias. Viewing fitspiration increased negative mood, which aligned with our hypothesis. There also was a significant decrease in body dissatisfaction and negative mood in the control group but no change in weight bias. It is important to highlight that both exposure to curvy fitspiration and to the control images (travel photos) had a positive impact on body dissatisfaction but likely did so through different mechanisms.

Our finding that exposure to curvy fitspiration images decreased body dissatisfaction may be explained by social comparison theory (Festinger, 1954). Viewing images of active individuals of higher weight could have allowed participants to compare themselves to a perceived more attainable body image, which could have decreased body dissatisfaction. This hypothesis aligns with Vogel et al. (2014) explanation that upward social comparison was a key reason why individuals experience negative impacts from social media; individuals who view curvy fitspiration would likely have less upward social comparison, though this potential explanation needs to be assessed through further research. Moreover, our finding that exposure to curvy fitspiration images decreases weight bias is consistent with previous research that showed that exposure to models who are of higher weight decreases antifat attitudes (Smirles & Lin, 2018). Similarly, our results align with Lin and Stutts (2020) finding that the use of counter-stereotypical information can cause a reduction in weight bias. Our use of women of higher weight who are active was counter-stereotypical since individuals of higher weight are often stereotyped as inactive (Puhl & Heuer, 2009).

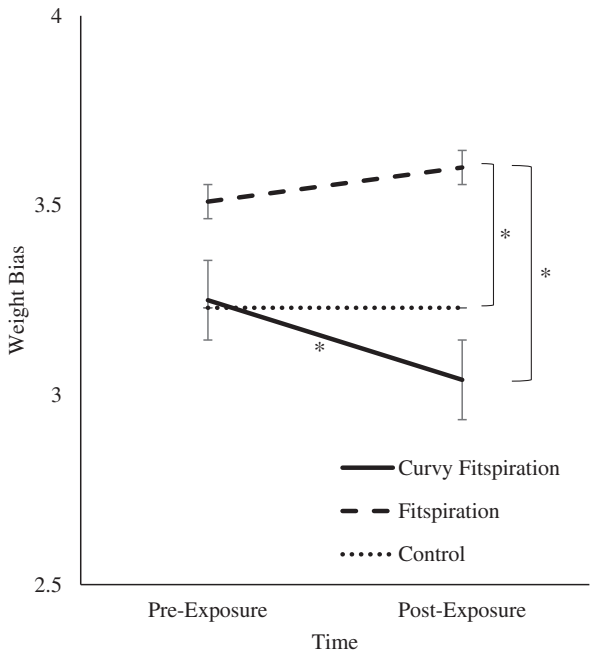
Contrary to our main hypothesis, viewing curvy fitspiration content did not significantly decrease negative mood in women, though there was a decrease. The changes in mood in the present study may have been too small or subtle in order for a significant effect to be produced. However, it's also possible that since this type of image is still a form of social comparison, it would not produce

Figure 2
State Negative Mood by Group and Time



Note. All error bars represent standard error.
* $p < .05$.

Figure 3
Weight Bias by Group and Time



Note. Vertical axis was abridged for clarity. All error bars represent standard error.
* $p < .05$.

mood benefits. In fact, exposure to social media has been consistently associated with depressed mood (Cunningham et al., 2021; Primack et al., 2021). Since this is one of the first studies to investigate the impact of curvy fitspiration, more research is needed to fully understand the impact of these images on negative mood.

Surprisingly, our research did not show that exposure to fitspiration increased body dissatisfaction, which was contrary to results found in previous research (Prichard et al., 2017; Rounds & Stutts, 2021; Tiggemann & Zaccardo, 2015). However, Slater et al. (2017) did not find a difference in body satisfaction after exposure to fitspiration and attributed their lack of finding to methodological differences between studies. Similarly, the difference in sample characteristics with our study could explain those discrepant findings; those studies included undergraduate students only whereas our study included women in their 30s on average. Perhaps use of Instagram and/or age played a role in the reactions to fitspiration since 71% of women aged 18–29 reported using Instagram compared to 48% of women aged 30–49 (Auxier & Anderson, 2021). It's possible that exposure to fitspiration images has a cumulative effect, so lower use may be protective. Different measures of body dissatisfaction also were used across studies. An alternative explanation could be that individuals identified the purpose of the study and had a defensive coping response that led to less of an effect of the idealized images, which aligns with findings by Wan et al. (2013). Similarly, another explanation is related to cultural exposure to the body positivity movement, which promotes treating one's body with respect and encourages the acceptance of diverse body types (Lazuka et al., 2020). For example, while Dignard and Jarry (2021) found that fitspiration and thinspiration (images promoting thin bodies) had a negative effect on body satisfaction, they found that having a positive body image had a protective effect for individuals exposed to thinspiration but not for individuals exposed to fitspiration. Individuals with a positive body image had lower appearance comparison after exposure to thinspiration compared to women with a more negative body image. They argued that women may have recognized the problems of thinspiration due to the body positive movement (their data came from 2016 to 2017) but not the problems of fitspiration as it appears to be more socially acceptable. It is possible that education about fitspiration's negative effects is becoming more prominent and possibly having the same effect on it as thinspiration. Nevertheless, the reasons for the lack of consistent effect of fitspiration on body dissatisfaction across studies are unclear and need to be studied further.

As expected, negative mood increased after exposure to fitspiration which aligns with previous research (Prichard et al., 2017; Rounds & Stutts, 2021; Tiggemann & Zaccardo, 2015). Perhaps exposure to thin, active women resulted in upward social comparison, which has been shown to engender negative feelings (Gerber et al., 2018). On the other hand, we were surprised that exposure to fitspiration did not increase weight bias as a previous study found that women who viewed a Victoria's Secret campaign of thin women in undergarments had higher dislike of individuals of higher weight than women who were exposed to an Aerie campaign featuring women of diverse body types in undergarments (Selensky & Carels, 2021). Those images were static, though, and ours were active, which could have been a reason for the difference in findings. It's also possible that since the images were about thin women rather than women of higher weight, individuals did not think about women of higher weight; therefore, there was no change in perspective.

In accordance with a study conducted by Rounds and Stutts (2021), we found that the control (travel) images produced positive effects, specifically decreasing body dissatisfaction and negative mood. These positive effects may be a display of relaxation that the travel images induced in the participant. This result aligns with a previous study that found that individuals had higher body satisfaction after viewing images of the natural environment such as mountains (Swami et al., 2018). This effect may be particularly present in our study because it took place during the coronavirus disease (COVID-19) pandemic in which traveling was less available. Another possibility is that the travel images decreased participants' focus on body image and allowed them to gain a bigger picture perspective, which increased their overall mood. This explanation is consistent with Naor and Mayseless (2020) finding that nature exposure is associated with a broader, more expansive perspective (outside of oneself).

Although our findings are valuable, this study has a number of limitations. Our sample contained only women who were predominantly White despite our attempts to obtain a more diverse sample from the general population. Similarly, this sample was from the community, which had a range of characteristics. As a result, we did not have enough participants in certain categories like race to examine differences. In addition, the negative mood measure postexposure had low reliability. That result may be due to that measure being only two items, one of which is reverse scored. Furthermore, that measure only included the "depressed/happy" aspect of negative mood rather than a broader conceptualization of negative mood (i.e., anxiety or irritability). Our study also included only self-report measures, which can result in social desirability bias and inaccurate information. Another limitation is that participants only viewed 20 images for a short period of

time. This simulation likely differs from the length of time and the number of images individuals view on Instagram in their day-to-day activities. Furthermore, participants only viewed one type of image, either curvy fitspiration, fitspiration, or travel images, as opposed to viewing a variety of content on Instagram. While we attempted to simulate Instagram with the composite image and then the individual images, we did not include a "like" function or "Instagram stories," which reduces the ecological validity of the simulation. In addition, we included a range of "curvy/higher weight" women; therefore, it is unclear if some of those images were still interpreted by participants as "ideal." Participants also may have had differing reactions depending on the level of "higher weight." The short period of time between the pre–post exposure measures could have also led to testing effects; for example, participants may have remembered the specific items asked and answered either similarly or differently as a result. There is also a broader limitation associated with demand characteristics compromising the internal validity of the study as the study description, consent form, and body satisfaction measure preexposure contained information that the study was about body image; individuals could have hypothesized the research question and responded in a socially desirable way (Want, 2014).

The main implication from our results is that a more diverse representation of active women of higher weight is needed on social media. There is a large discrepancy in the number of images found under #fitspiration (19.5 million) in comparison with #curvyandfit and #curvyyoga combined (359,000). It would be beneficial to close this gap and increase the curvy fitspiration representation in order to reduce weight bias. Alternatively, the #fitspiration could overall contain more diverse body types such that a separate hashtag would not be needed for women of higher weight. However, it is important to note that sometimes the hashtags of #curvyandfit and #bodypositivity contain problematic images and messages such as encouraging unhealthy methods of weight loss (Lazuka et al., 2020; Webb et al., 2019). Therefore, in addition to directly affecting the content, viewers could be educated about intentionally diversifying the content they view on Instagram and blocking content that does not align with appropriate messaging about health and weight. Previous research has shown that it is possible to effectively use multimedia to reduce weight bias (Swift et al., 2013). Moreover, one study found that nonstigmatizing images were found to reduce support for medical policies that discriminated against women of higher weight (Brochu et al., 2014). Similarly, we suggest that curvy fitspiration images may be used as an intervention method against weight bias. The images can be used alongside other interventions, such as the Health at Every Size course, which is an intervention that teaches counter-stereotypic information about how individuals in higher weight groups can be healthy (Humphrey et al., 2015).

Another implication is the benefit of both exposure to curvy fitspiration and travel images on body dissatisfaction. These results suggest that having higher access and exposure to either of those images may be helpful and likely work through different mechanisms. However, the extent to which different types of social media interventions would be the most effective method is unknown and needs to be explored in future research.

Conclusion

This study's main finding was that exposure to curvy fitspiration decreased body dissatisfaction and weight bias in women; therefore, increasing representations of diverse body types on social media could be beneficial. However, we also found that exposure to travel images had a similar positive effect on body dissatisfaction. The mechanisms by which those different images have positive impacts need to be explored further. It would also be helpful to examine the impact of static versus active images and how fitness-related images (e.g., picture of gym equipment) that do not feature individuals' bodies affect women. Future studies should examine the impact of curvy fitspiration on other genders and obtain a more diverse sample in terms of race and culture. In addition, studies should examine the impact of viewing different races for fitspiration on the participant. Conducting a longitudinal study would be beneficial to see how long the effects last. Similarly, examining the amount of time individuals spend viewing fitspiration should be explored. Social media interventions to combat weight bias need further examination as well. Ultimately, continuing this research can inform education and interventions to reduce body dissatisfaction and weight bias.

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Received August 27, 2021
Revision received January 21, 2022
Accepted January 24, 2022 ■