

Exposure to thin-ideal, fitspirational, and plus-size Instagram images influences body image and body-change cognitions in women and men

by Jodie Mechielsen and Alexander Mussap

Abstract

We conducted an experiment with 185 women and 118 men 18–40 years old into the effects of viewing thin-idealized, fitspirational, and plus-size bodies sourced from Instagram on their body image and body-change cognitions. Analyses revealed post-exposure changes in body image, outcome evaluations (the desirability of the ideal body), and normative beliefs (beliefs about the use of diet/exercise by role models). In each case, thin and fitspirational bodies induced detrimental changes, and plus-size bodies induced beneficial changes.

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Introduction

Traditional visual media and the influence of feminine and masculine appearance ideals

Body dissatisfaction is highly prevalent both in girls/women (Tatangelo, *et al.*, 2015) and boys/men (Baker, *et al.*, 2019; Ricciardelli and McCabe, 2004; Tiggemann, *et al.*, 2007). It is associated with negative mood and poor self-esteem (Cruz-Sáez, *et al.*, 2020; Goldschmidt, *et al.*, 2016), it can impair psychosocial functioning and affect quality of life (Robbins and Reissing, 2018). Body dissatisfaction also constitutes a risk factor for disordered eating, obligatory exercise, and use of dietary supplements and anabolic steroids (Chang, *et al.*, 2019; Hartmann, *et al.*, 2018).

According to the tripartite influences model (Thompson, *et al.*, 1999), sociocultural factors such as family,

peers and, in particular, visual media, encourage body dissatisfaction by promoting the internalization of unrealistic and potentially unhealthy body ideals (Roberts, *et al.*, 2022). These ideals have traditionally taken the form of a feminine ideal that has very low adiposity (Dittmar and Howard, 2004; Tatangelo, *et al.*, 2015; Tiggemann, 2012) and a masculine ideal that combines low adiposity with high muscularity (Girard, *et al.*, 2018; Hargreaves and Tiggemann, 2009). Self-discrepancy theory (Higgins, 1987) posits that body dissatisfaction results from comparing oneself to these unrealistic ideals.

Social media and ‘thin-idealized’ imagery

Currently, 4.5 billion people access social media platforms on a regular basis (Sharp and Gerrard, 2022). These platforms are particularly popular among adolescents and young adults in technologically developed western countries where users spend on average 2.5 hours a day (de Valle, *et al.*, 2021) interacting via image, text, audio, and/or video (Danthinne, *et al.*, 2022). The popularity of social platforms can be attributed to improved Internet access worldwide, widespread adoption of personal mobile devices, and the ease of maintaining social, professional, and political networks that can be geographically dispersed, confidential, and closed to outsiders (Seelig and Huixin, 2022). Although there is evidence that these social platforms can be psychologically and socially valuable, particularly to people from marginalized groups (Wagner, *et al.*, 2016), there are concerns that social media content can also contribute to body dissatisfaction (Rodgers and Rousseau, 2022; Santarossa, *et al.*, 2019).

Cross-sectional studies consistently reveal a link between use of social platforms and both body dissatisfaction and disordered eating symptomatology (*e.g.*, Burnell, *et al.*, 2019; Cohen and Blaszczynski, 2015). The mechanisms of action are thought to be the same as those operating in the off-line world, with exposure to thinness-promoting messages encouraging appearance comparisons, internalization of unrealistic thinness goals, and adoption of dietary restraint (Rodgers and Rousseau, 2022). Image-based content on these platforms appears to be particularly problematic, with frequency of exposure to thin-idealized images on social platforms serving as a better predictor of body dissatisfaction and disordered eating risk than overall time spent on these platforms (Vandenbosch, *et al.*, 2022). A focus on imagery-based content may also explain the greater association with negative body image of image-based photo-sharing platforms such as Instagram compared to text-based platforms such as Facebook (Vandenbosch, *et al.*, 2022). Experiments also confirm that even brief exposure to photos of thin-idealized same-sex models via social platforms can increase body dissatisfaction in both women (Krug, *et al.*, 2020) and men (Yee, *et al.*, 2020).

Social media platforms allow consumers not only to view images of idealized bodies but also to ‘like’ or ‘follow’ them, share them, even create and share their own idealized ‘selfies’ and receive feedback from others in return (Carrotte, *et al.*, 2017; Wagner, *et al.*, 2016). It is suggested that the interactivity inherent in social platforms gives users far greater control over the body shapes and sizes they view, allowing them to limit their exposure to a narrower set of physical attributes than would be possible with traditional media (*e.g.*, Mabe, *et al.*, 2014). These interactions also have the potential to increase emotional investment in these images, potentially enhancing their effects on body dissatisfaction and eating disorder risk (Cohen, *et al.*, 2018; González-Nuevo, *et al.*, 2021; Holland and Tiggemann, 2017; Hummel and Smith, 2015; Tiggemann and Barbato, 2018).

Instagram and the promotion of ‘fitspirational’ imagery

Instagram is currently the seventh most visited Web site in the world, the fourth most used social platform, the second most downloaded app worldwide, and the largest (by userbase) to feature image-based content (McLachlan, 2022). It appeals to consumers interested in appearance-related content and is frequented by conventionally attractive ‘influencers’ who promote fashion, cosmetics, lifestyle, health and ‘wellness’ products to their followers, often using themselves as models (de Valle, *et al.*, 2021). Thinness as beautiful, aspirational, and healthy are ideas that are consistently promoted, both explicitly and implicitly, on the platform. Leaked internal documents from the company reveal that it is aware of the detrimental impact that these pro-thinness messages have had on many of the users of their platform (Wells, *et al.*, 2021).

Instagram, along with other image-based platforms, has also contributed to the popularity of ‘fitspirational’ images consisting of a combination of low adiposity and muscularity. These images are ostensibly designed to empower and motivate body change (Tiggemann and Zaccardo, 2015), however, they often depict unrealistic and unhealthy levels of thinness and muscle that can cause body dissatisfaction in women and men (Griffiths, *et al.*, 2018). Worryingly, because the pursuit of fitness is typically portrayed as admirable and healthy, these images may mask the potential risks of viewing such unrealistic bodies (Holland and Tiggemann, 2017).

Cross-sectional and experimental research supports the idea that exposure to fitspirational images on Instagram and other social media platforms can increase body dissatisfaction and induce negative mood in women and men (Krug, *et al.*, 2020; Rounds and Stutts, 2021; Yee, *et al.*, 2020). Qualitative research confirms these damaging effects even in users who appreciate that the images are unrealistic, and despite their being aware that the people/organisations promoting these images are being manipulative (Easton, *et al.*, 2018).

The rise of the body-positive movement and the promotion of ‘plus-size’ imagery

There have been recent moves by supporters of the body-positive (#bopo) movement to co-opt image-based platforms such as Instagram for the purposes of countering unrealistic and narrow appearance ideals (Cha, *et al.*, 2022; Cohen, Fardouly, *et al.*, 2019; Cohen, Irwin, *et al.*, 2019). The body-positive movement lobbies for the use of average or plus-size models in fashion and marketing with the aims of encouraging body acceptance, increasing body diversity and appearance inclusivity, fostering respect for all body sizes and shapes, and combating anti-fat bias (Rodgers, *et al.*, 2022). An even more recent trend has been to promote bodies that combine plus-size and fitspirational features. These ‘curvy fitspiration’ bodies are presented as an alternative to both the thin and fitspirational feminine ideals (Cha, *et al.*, 2022). As with plus-size bodies, curvy-fitspirational images aim to disrupt and diversify appearance ideals, primarily in relation to women, subvert the implicit pro-thinness message inherent in fitspirational bodies, and encourage body satisfaction.

There is emerging evidence that exposure to normal or plus-size models can have therapeutic benefits (Cohen, *et al.*, 2020; Diedrichs and Lee, 2010) in the form of reduced body dissatisfaction in women following exposure to plus-size female bodies (Clayton, *et al.*, 2017; Rodgers, *et al.*, 2021; Tiggemann, *et al.*, 2020) and, to a lesser extent, reduced body dissatisfaction in men following exposure to plus-size non-muscular male bodies (Diedrichs and Lee, 2010). However, similar effects have not been observed following exposure to thin, non-muscular male bodies (Galioto and Crowther, 2013). Although research on the therapeutic use of curvy-fitspirational images is comparatively new, there is some experimental evidence that exposure to curvy-fitspirational images is also associated with reduced body dissatisfaction and negative mood, at least in women (Cha, *et al.*, 2022).

Do idealized images also influence body-change cognitions?

The research discussed above into media influences has focussed on psychological mediators such as appearance comparison and internalization of the body ideal, and on psychological outcomes such as body dissatisfaction and mood (*e.g.*, Burnell, *et al.*, 2019; Cahill and Mussap, 2007; Tiggemann and Zaccardo, 2015; Vandenbosch, *et al.*, 2022). We suggest that there are good reasons to suppose that body-change cognitions may also be involved. First, it is important to recognize that body image itself is a complex, multidimensional construct that includes a cognitive component along with an emotional component (Cash and Deagle, 1997). Second, unhealthy body change behaviours such as disordered eating (Cash, 2012) are typically precipitated not only by high levels of body dissatisfaction, but also by unhealthy appearance-related cognitions such as unrealistic appearance standards/goals and unrealistic beliefs about the ability of certain behaviours to achieve these goals.

Which cognitions warrant attention within an exposure paradigm? We suggest that the theory of planned behaviour (TPB; Ajzen, 1999), which has received extensive empirical support in the context of healthy and unhealthy behaviours (Cooke, *et al.*, 2016), provides a basis for identifying which cognitive states might be

influenced by exposure to idealized bodies. The focus of the TPB is on behavioural intentions and their cognitive precursors. To illustrate, consider how the TPB might apply to the pursuit of thinness. According to the TPB, the intention to engage in weight-loss behaviours might consist of the following cognitive states: (i) The desirability of weight loss as an outcome; (ii) beliefs about the effectiveness of a behaviour like dieting to achieve this outcome; (iii) normative beliefs about the use of dieting by important others such as role-models and celebrities; and, (iv) behavioural control beliefs relating to one's ability to diet (Ajzen, 1999). The core idea of our study was that the influence of social media platforms on users' body image might be understood by studying how cognitive states change after viewing idealized bodies sourced from these platforms.

Aims and hypotheses

The first aim of our study was to confirm/replicate previous experimental evidence that exposure to Internet images of thin- and fit-idealized bodies negatively affects women's and men's body image. Related to this aim was the question of whether exposure to plus-size bodies imparts some benefit to state body image. On the basis of prior literature (e.g., Benton and Karazsia, 2015), we hypothesized that even brief exposure to the idealized bodies would adversely impact on women's and men's body image (mood and self-appraisals), and that exposure to plus-size bodies would induce generally beneficial (or neutral) shifts in these same psychological states.

The second aim of our study was to address the almost exclusive focus of previous experimental research on body image states by adding evaluations of cognitive states relevant to body change. These cognitive states were derived from the TPB and included measures of diet/exercise-related outcome and behavioural beliefs, subjective norms, perceived behavioural control, and behavioural intention. We hypothesized that post-exposure changes in these cognitive-behavioural states would be observed alongside changes in body image.



Method

Participants

Participants were a convenience sample of 185 women and 118 men aged 18–40 years ($M=25.06$, $SD=7.70$). The majority identified as white (82.7 percent), followed by Asian (7.6 percent), Middle-Eastern (2.8 percent) and multiracial (2.8 percent). Of those who responded to questions about their sexuality, 94.4 percent indicated they were heterosexual/straight, 2.0 percent that they were homosexual/gay/lesbian, and 2.0 percent that they were bisexual.

Materials

Participants completed a series of eight visual analog scales (VAS), anchored by “*definitely not*” (0) and “*definitely*” (100) immediately prior to and again following exposure to images of same-sex bodies. These scales were used to measure three mood and self-evaluative states related to body image:

1. Body dissatisfaction (*Do you feel dissatisfied with the appearance of your body?*);
2. depression (*Do you feel depressed?*); and,
3. self-esteem (*Do you feel good about yourself as a person?*);

and five body-change cognitions derived from the TPB:

4. Outcome evaluation (*Do you want to attain your ideal body?*);
5. behavioural belief (*Do you believe dieting and/or exercise would let you attain your ideal body within*

- the next six months?*);
6. normative belief about the behaviour (*Do you think that women with ideal bodies look the way they do by dieting and/or exercise?*);
 7. control belief about the behaviour (*Could you do what it takes to attain your ideal body within the next six months?*); and,
 8. behavioural intention (*Would you consider changing your eating and/or exercise behaviours right now to attain your ideal body?*).

Image ratings and selection process. Images were selected from a pool of Instagram profiles sourced using the following hashtags: #fitspo; #musclebuilding; #musclemodel; #beachwear; #lean; #thin; #slender; #slendergirl; #bodypositive; #plussize; #plussizemodel; #plussizefashion; #plussizebeauty; #bigmen; #bigmensfashion. Final images used in the study had at least 500 ‘likes’ and/or ‘followers’. Males were topless and wore form-fitting pants or shorts; females wore form-fitting clothing that exposed their stomach, arms, and legs, with no distracting objects such as phones or clothing logos/branding visible. A final set of images, three of each body shape for each sex, was determined on the basis of muscle and adiposity ratings provided by 57 women and 18 men who were not associated with the project and did not participate in any other part of the study (see [Figure 1](#)). Examples from the final image set used in the study, with faces pixelated, are shown in [Figure 2](#).

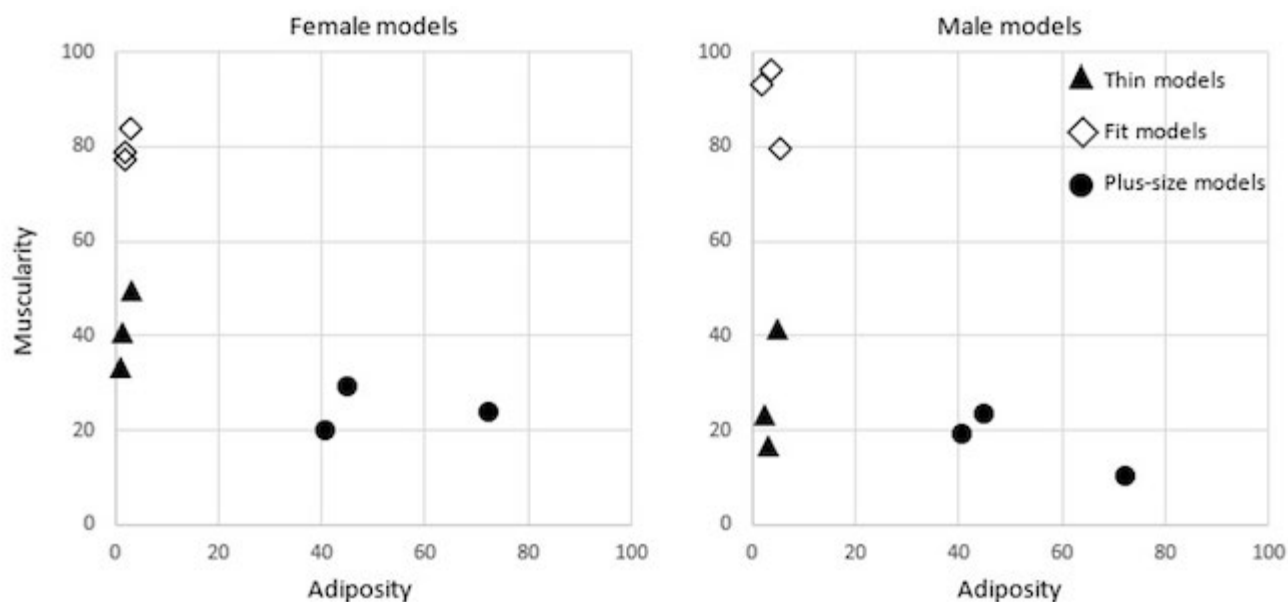


Figure 1: Muscularity and adiposity ratings of female models by 57 women and male models by 18 men.

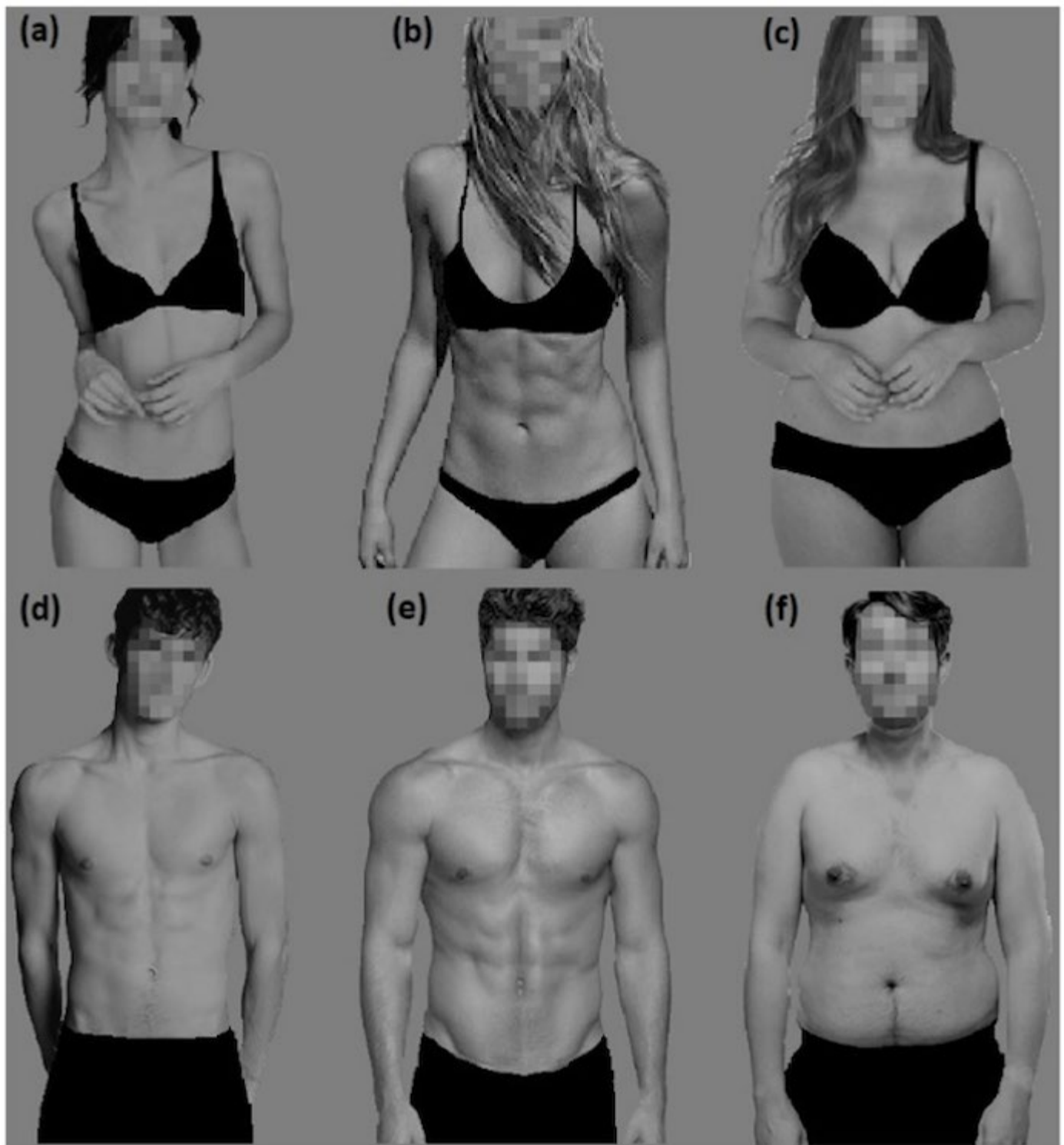


Figure 2: Examples of thin-idealized (a and d), fitspirational (b and e), and plus-size (c and f) Instagram models used in the study. Note that participants were presented only with same-sex images and that the faces of these images were not pixelated in the actual study.

Images were used in the study and reproduced here in accordance with the fair dealings exception under the Australian Copyright Act 1968 (Cth), ss 40(1), 103C(1), that applies to the use of copyrighted material for the purposes of research or study.

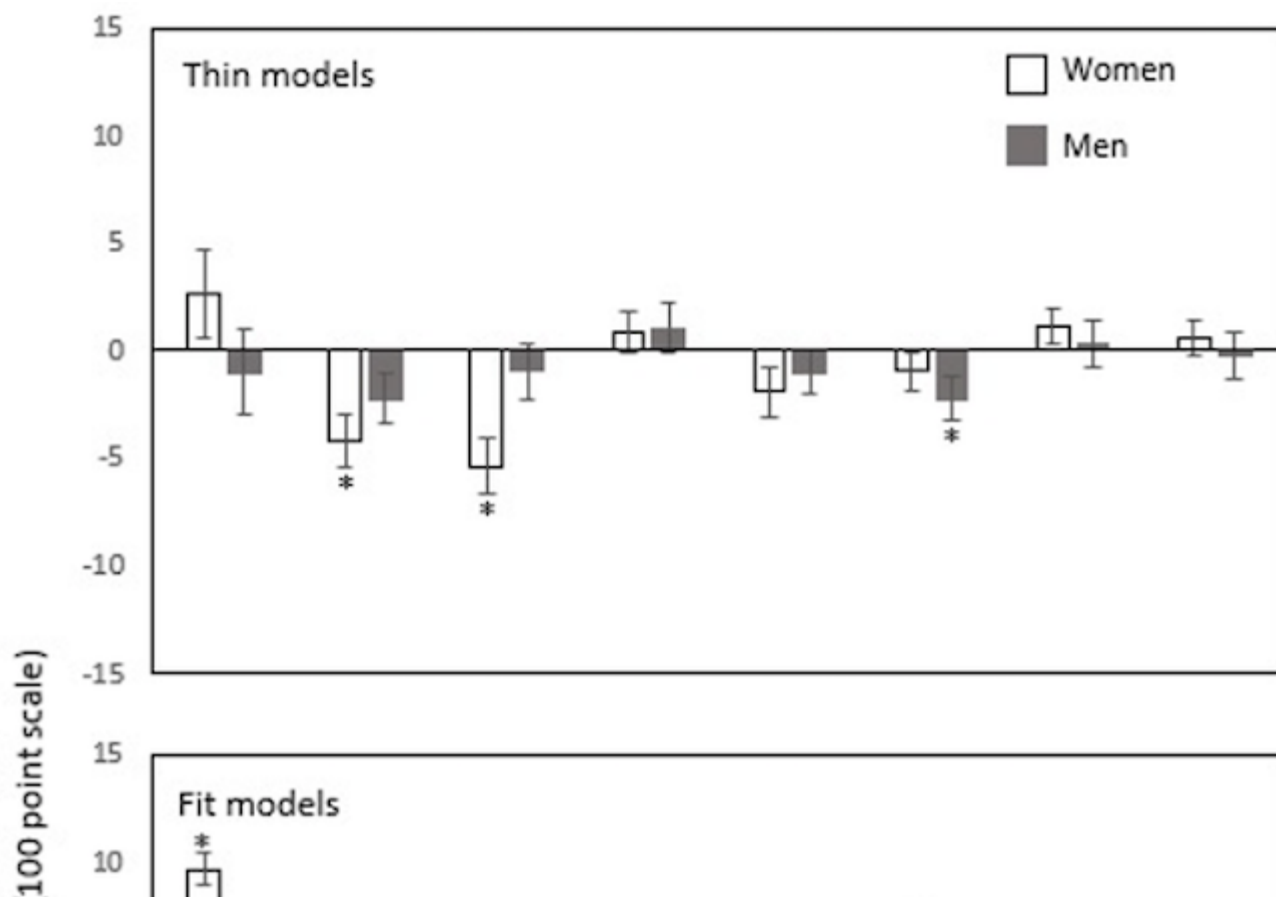
Procedure

Stage 1 of the study was in the form of an online survey. Stage 2 was conducted face-to-face at our university's psychology laboratories. In Stage 2 the images were presented to participants in blocks of three containing the same body-type (*i.e.*, thin, fit, or plus-size). The order of these blocks, and the order of the three images within each block, was randomized for each participant. The VAS measures were presented in random order immediately pre- and post-exposure to each block. A rest break of a minimum of no less than five minutes separated each block.

Results

Items were screened for missing values (<5 percent and excluded from analyses), internal consistency, univariate and multivariate outliers, and deviations from normality. Paired t-tests compared post- versus pre-exposure VAS scores for each body type by each psychological state (against a modified Bonferroni-corrected alpha of .03). The results, shown in [Figure 3](#), confirm that, as hypothesized, body image states typically worsened in women (but not men) following exposure to thin or fit female models. Body dissatisfaction and depression were more strongly affected by fit models, whereas self-esteem was more strongly impacted by thin models. Also as hypothesized, exposure to plus-size models had generally beneficial effects for women, but not men, in terms of these psychological states.

For the five body-change cognitive states, exposure effects were generally not as pronounced and limited primarily to fit models and plus-size models. Most effects were in relation to increased outcome evaluations and normative beliefs in women and men following exposure to fit models. In terms of intention to engage in dieting/exercise, only exposure to plus-size models showed an effect, and only for men.



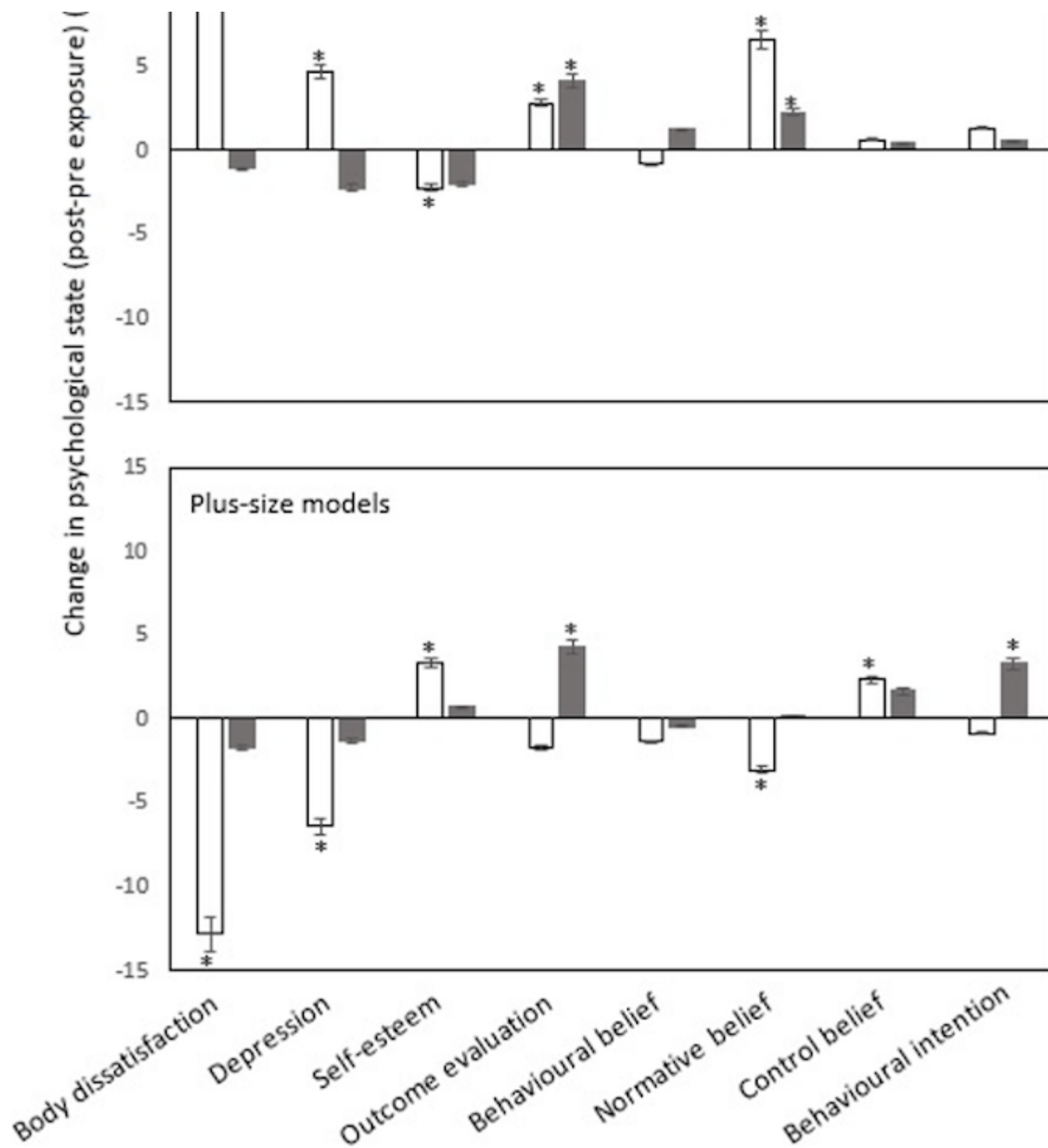


Figure 3: Change in psychological state (post-post exposure) in response to same-sex thin, fit, or plus-size models as a function of gender (± 1 SE bars are included); *results of paired samples t-tests at $p < .030$.

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Discussion

Mood and self-evaluative states related to body image

Our results replicated previous image-exposure studies in showing that women's state body dissatisfaction and, to a lesser extent state self-esteem, were affected detrimentally by exposure to thin and fit models. These results support the idea that idealized bodies, including fitspirational imagery, can be harmful to women (Roberts, *et al.*, 2022; Tiggemann and Zaccardo, 2015). Shifts in psychological states were also observed following exposure to plus-size bodies, this time in the form of reduced state body dissatisfaction and depression and increased self-esteem. These shifts were consistent with the idea that exposure to plus-size bodies can reduce the discrepancy between women's own and ideal body (Bosch, *et al.*, 2010; Dittmar, *et al.*, 2009), and thus supports calls for the media to self-regulate their portrayal of women's bodies in advertising and fashion and include greater diversity in body sizes and shapes (Diedrichs and Lee, 2010).

It is important to consider why exposure to male models appeared to have no appreciable effect on men's body image. The limited prior research that has been conducted with men suggests that body dissatisfaction can sometimes increase following exposure to muscular male bodies (Galioto and Crowther, 2013). Perhaps this increase is because previous studies have tended to use images of stereotypical bodybuilders rather than the lean/fit-ideal male bodies that we used our study. Bodybuilders have exaggerated musculature and are not universally aesthetically pleasing to many men in the way that fit-ideal male bodies are. A greater aesthetic appeal of our male models may thus have induced a 'fantasy' effect (see Halliwell, *et al.*, 2007) in our male participants, neutralising any detrimental effects our male participants may have experienced due to being exposed to an unrealistic ideal.

Body-change cognitive states derived from the TPB

The cognitive states selected from the TPB, worded so as to focus on appearance and body-change behaviours, revealed post-exposure changes in relation to outcome evaluations and normative beliefs (in women and men) following exposure to fit models.


Outcome evaluations describe the extent to which a person desires an outcome, such as body change, promised by the behaviour in question, such as dieting or exercise. Put another way, our results demonstrated small but consistent group-level increases in internalization of one's body ideal following exposure to fit but not thin models. Our findings are thus similar to those of Tiggemann and Zaccardo (2015) who also reported increased 'inspirational goals', or feeling inspired to improve fitness and health, following exposure to fitspirational images. Our results are thus in keeping with the purported nature of these images: that they are designed to motivate.

Normative beliefs describe the extent to which a behaviour such as dieting or exercising is utilized by influential others such as role models — in our study, people who possess one's ideal body. To our knowledge, normative beliefs have not been included in previous image-exposure studies. That both men and women in our study increased their beliefs that people with ideal bodies diet/exercise is thus a novel finding and one that may be particularly relevant in conjunction to the shifts in outcome evaluations described above: If viewing a fit model both increases the desire to achieve the ideal body and also enhances the belief that one's body role models use dieting/exercising to achieve their bodies, then this could be a potent normaliser and motivator of potentially unhealthy body change. Note that dieting/exercising for aesthetic reasons is associated with negative mood and disordered eating (*e.g.*, Jankauskiene and Mieziene, 2013).

Limitations

The use of VAS scores assumed that participants could provide accurate feedback about their psychological states. It also assumed that changes in these states are relevant to actual behaviour change (Ajzen, 1999). Also limiting was our use of images that were presented to participants briefly and without any of the context — marketing information, captions, comments, articles, 'likes' — that normally accompany such images (Boepple and Thompson, 2016). Given the focus on appearance-related images and VAS questions, it was also difficult for us to conceal from participants the general aims of our study.

Conclusion

Our results highlight the problematic nature of thin-idealized images in relation to women's body image and support the idea that fitspirational images constitute an emerging threat (Griffiths, *et al.*, 2018; Tiggemann and Zaccardo, 2015). Our results also suggest that plus-size images can have a positive influence on women's body image. Together, these results support calls for media to depict greater diversity in women's body sizes and shapes (Diedrichs and Lee, 2010). The results of our study also suggest that two cognitive states — outcome evaluations and normative beliefs — may be particularly affected by exposure to fitspirational bodies, a result that is potentially important given that these cognitions are known to be cognitive precursors of actual body-change behaviours in women and men. 

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Exposure to thin-ideal, fitspirational, and plus-size Instagram images influences body image and body-change cognitions in women and men
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