Are humorous or distractor images more effective than self-compassion messages for combating the negative body image consequences of social media? An experimental test of possible micro-intervention stimuli

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ABSTRACT

Appearance-focused images on social media are thought to be particularly detrimental for body image. However, social media sites can also be used to encourage positive health behaviours. Three linked experiments with 620 Instagram users explored the protective capabilities of appearance-related self-compassion and appearance-related humorous messages for women’s body image during Instagram use. Using simulated Instagram browsing tasks, participants were exposed to a set of fitspiration Instagram posts mixed with either self-compassion or humorous body image messages, or appearance-neutral images. Results indicated that appearance-related self-compassion and humorous messages were not more effective at protecting against negative appearance and life satisfaction outcomes than appearance-neutral images, and did not influence appearance comparison (Experiment 1), even when the personal relevance to participants’ health was reinforced through experimental manipulation (Experiment 2). Rather, the presence of any image which did not contain pictures of women, regardless of image content, led to improved body image outcomes compared to exposure to fitspiration images alone (Experiment 3). Interpersonal factors such as the similarity of a female target’s appearance also influenced the nature of comparisons made. The study highlights the importance of diluting appearance-focused content with other social media images in ongoing research practice and for user well-being.

1. Introduction

Social media platforms are a popular, ubiquitous and accessible form of communication which have been widely embraced by the public, providing opportunities for users to seek out information, share opinions, and learn from others across a broad range of formats. However, the provision of reliable health communication in this context is often varied (Moorhead et al., 2013) and an effective strategy is yet to exist, which exploits the influence of social media in a positive way, to counteract the impact of pervasive appearance ideals (Tiggemann, 2022). Social media use has been linked to body image disturbance, particularly among younger users (e.g. Saiphoo & Vahedi, 2019), with the viewing of images depicting idealised appearance thought to be particularly detrimental to body image (de Valle et al., 2021). Browsing the social media profiles of other users has also been associated with poorer psychological well-being (e.g. Burnell et al., 2020), whilst temporary periods of abstention from social media can improve mood and life satisfaction (Fioravanti et al., 2020). Despite the negative consequences of use, some authors have identified the ‘immense potential’ of social media for disseminating health-related information and encouraging positive health behaviours (e.g. Maher et al., 2014, p. 1). However, more research is needed to understand how social media site usage, in its many forms, might specifically be adapted to better protect body image online.

Instagram is a social media platform where users primarily share photos and videos. Due to its emphasis on visual image sharing, Instagram is thought to be one of the most harmful platforms and has been associated with greater rates of increased appearance comparison and decreased body satisfaction compared to Facebook (Engeln et al., 2020). Engagement with appearance-focused content on Instagram in...
particular, rather than more general use has been associated with negative body image outcomes (Cohen et al., 2017), with exposure to images of attractive peers and celebrities being detrimental to mood and body satisfaction (Brown & Tiggemann, 2016). Instagram has also become associated with the spread of different appearance trends. One such trend, known as fitspiration, consists of idealised images of thin and toned women, which aim to encourage exercise and healthy lifestyles, often for appearance-focused reasons (Tiggemann & Zaccardo, 2018). Exposure to fitspiration content is known to increase body dissatisfaction and negative mood among women (Prichard et al., 2020; Tiggemann & Zaccardo, 2015). In previous research, the negative effects of exposure to appearance-focused Instagram content have often been identified through experimental comparison with exposure to appearance-neutral images that demonstrate no negative impact on body image outcomes (de Valle et al., 2021). Such appearance-neutral images have included travel images (e.g. Brown & Tiggemann, 2016), architecture or landscapes (e.g. Nelson et al., 2022), and interior design images (e.g. Slater et al., 2017). However, such studies are not able to show how body image outcomes might be improved.

1.1. Countering negative body image effects on social media

One approach that has been tested for protecting women’s body image from exposure to ideal images is the use of digital disclaimer messages. These seek to indicate the edited or unrealistic nature of the physical appearance of media models as a means of highlighting their inappropriateness as a comparison target. However, based on results from their systematic review, McComb and Mills (2020) suggest that overall, disclaimers had no positive effect on body image outcomes. Moreover, disclaimers which detail how a model’s appearance has been digitally altered, or included warnings of potential harm, can actually lead to increases in body dissatisfaction. This may be because disclaimers do not reduce the tendency to make appearance comparisons (Bury et al., 2016), whilst evidence from eye tracking studies suggests that the presence of disclaimers may even act to direct participants’ attention to the model’s body to a greater extent (Tiggemann et al., 2019a).

Some studies have explored whether messages, in the form of ‘self-disclaimers’ communicated via image captions (e.g. ‘not real life – took over 100 images trying to look good!’) are more persuasive when originating from the individual in the image (Fardouly & Holland, 2018). However, exposure to idealised Instagram images was found to increase body dissatisfaction regardless of the presence or absence of a self-disclaimer label. Self-disclaimers also do not lead to reduced appearance comparisons with the person in the image or lead to images being seen as less realistic (Livingston et al., 2020). Disclaimer messages in the form of ‘reality check’ comments made by other users which call out idealised Instagram posts for being fake or unrealistic have been shown to reduce body dissatisfaction compared to positive appearance appraisal comments, but do not effect appearance comparisons (Tiggemann & Velissaris, 2020). Taken together, current research suggests that the effectiveness of disclaimer labels is sensitive to who authors the message; disclaimers are less effective and seen as more insincere when produced by the same person who is believed to have edited the image. However, peer-messages which identify images as inauthentic may be more effective at protecting body image.

Other studies have examined the impact of different types of social media post. For example, Fioravanti et al. (2021) investigated the effects of following either fitspiration, body positive or appearance-neutral content over 28 days. They found that daily exposure to body positive content led to increased body satisfaction and positive mood, compared to exposure to fitspiration content. However, exposure to both types of content led to increased appearance comparison. They also found that participants who viewed appearance-neutral content (e.g. travel/nature images) experienced increases in body satisfaction and positive mood, suggesting that such posts could hold some value for reducing negative body image outcomes online, although it was not clear why this might be the case. More recently, the benefit of interacting with body positive and appearance-neutral content has been replicated on Facebook. Fardouly et al. (2023) exposed participants to either body positive or interesting science/culture content via Facebook groups, over a two-week period. They found that both body positive and appearance-neutral content was associated with decreased body dissatisfaction, but that only body positive content was associated with decreased reports of appearance comparison. The authors speculated that the impact of appearance-neutral content might encourage users to focus on things not related to appearance or reduce the salience of appearance-focused content on Facebook.

An alternative theoretical explanation for the efficacy of different types of content for protecting against the negative impacts of social media, are their links to different mechanisms of coping. Both self-compassion and humour are known emotion-focused and avoidant strategies, respectively, for coping with negative experiences (Allen & Leary, 2010; Plester, 2009) and have been linked to coping via social media (Cauberghe et al., 2021; Keyte et al., 2021). Slater et al. (2017) were amongst the first to note the popularity of self-compassion themes on Instagram, where in 2017 the search ‘#selfcompassion’ yielded 60,000 results. In the intervening years, this trend has continued with, as of 2023, ‘#selfcompassion’ yielding over 1.5 million results. By comparison, humour has also come to hold an important place on social media, for example through the use of memes which provide a foundation for circulating ideas, and influencing and reflecting discourse within society (Miltner, 2018). Memes are images, videos or text which are shared peer-to-peer, circulated widely and transformed online by multiple users (Shifman, 2013), with the humorous nature of their content being the key driver behind their circulation. Such humour is now widespread on Instagram where, to date, a simple search for ‘#funnymemes’ yields over 76 million results. While researchers are beginning to gain insight into how such trends may be linked to coping in some areas (e.g. Akram & Drabble, 2022; Myrick et al., 2022), further research is needed to understand how memes may be used to protect women against negative body image outcomes experienced through social media.

1.1.1. Self-compassion and body image

Self-compassion involves replacing self-critical tendencies with understanding, and the acceptance of flaws as being part of human nature (Neff, 2011). Evidence has suggested that interventions designed to encourage self-compassion can be effective at protecting body image, and can help women cope with the negative impact of appearance-focused images. Moffitt et al. (2018) found that the negative impact of exposure to thin-ideal images could be lessened by women engaging in writing tasks involving expressing kindness towards their own appearances. The benefit of self-compassion on social media has been demonstrated in studies where self-compassion messages posted alongside idealised appearance images have been found to improve body image outcomes for women (Barron et al., 2021; Slater et al., 2017), although it is less clear whether such messages also reduce the tendency to make appearance comparisons.

Content alleging to promote body positivity has become increasingly popular on social media, with several different forms of expression underlying the concept (Darwin & Miller, 2021). Themes that have been identified in body positive content on Instagram include the promotion of self-love, the acceptance of different body types, and an appreciation for health and gratitude for the body’s capabilities rather than focusing on appearance (Cohen et al., 2019). However, evidence of the impact of body positivity on body image outcomes appears mixed. Davies et al. (2020) found that body positive captions encouraging self-acceptance of appearance were associated with improved weight-esteem compared to captions encouraging the improvement of personal fitness, when posted alongside images of thin and toned women. In contrast, Tiggemann et al. (2020) found body positive captions had no overall effect on body dissatisfaction after viewing images of average-sized and thin models,
compared to the same images with no captions. More recently, Legault and Sago (2022) have demonstrated that messages which pressured women to feel body positive (e.g. ‘you must accept your body’) may be more detrimental to body image outcomes, than messages which emphasised personal agency (e.g. ‘you are the author of your own happiness’) or acceptance from others in the evaluation of appearance (e.g. ‘there are lots of people out there who appreciate you just the way you are’). It follows that not all forms of ostensibly supportive body image messages may help to reduce the negative effects of social media on body image, and that the manner through which communications express positivity or specifically focus on appearance may be critical in determining their effectiveness.

1.1.2. Humour and body image

Some research has highlighted the possible utility of humour for countering the effects of appearance-focused messages. Specifically, Slater et al. (2019) found that the negative impact of idealised celebrity images was reduced when they were presented alongside parody images which mimicked the original source. The authors suggest that humorous content designed to critique unrealistic appearance standards may hold value for improving body image outcomes online. Despite this, the use of parody for comic effect may be limited in its practical application, since this specific form of imitation requires user knowledge or reference to original source being parodied to be effective.

The ability of other forms of humour to protect body image outcomes online is not yet known. However, the benefit of humour has been evidenced in broader well-being research, where humour interventions have successfully led to improvements in emotional well-being (Crawford & Caltabiano, 2011). Humour can be used by women to reject traditional female stereotypes and roles (Case & Lippard, 2009), and as a way of allowing audiences to contest accepted social hierarchies and behaviours (Amarasingam, 2010). Satirical humour can also be used to challenge unrealistic beliefs by reflecting their absurdity (Barreca, 1988). It follows that humour may offer a possible strategy for promoting the notion that appearance ideals on social media are unrealistic, and for discouraging appearance comparison. As a popular form of humorous online content, memes are known to spread effectively when audiences emotionally resonate with them (Miltner, 2014), and the use of memes has been shown to increase interest in internet campaigns (e.g. Lenda et al., 2020). Memes could, therefore, provide a suitable vehicle through which messages protective of body image could be shared.

Previous authors have emphasised the importance of health communications which can be targeted to the specific audiences, are tailored to suit specific means of dissemination (Klassen et al., 2018) and harness salient cultural practices to encourage engagement (Kostygina et al., 2020). It may therefore be expected that health communications which are congruent with the typical form of messages seen on social media platforms, such as Instagram, and offer some level of personal relevance may be more effective at producing attitudinal or behavioural change (Schmid et al., 2008). Messages are known to be processed more carefully and thought to be more persuasive when they are perceived as being more personally relevant (Pettit et al., 1983). It may therefore be expected that humorous messages about body image and appearance, which are relatable to participants and delivered in a format that is familiar and relevant, may provide an effective means of reducing body image concern.

1.2. Social comparison and other forms of appraisal

A further factor that is important to consider when attempting to address the negative impact of social media on body image is that of social comparison. The tendency to compare ourselves to others is well-established as a predictor of body dissatisfaction (Myers & Crowther, 2009). It follows that an intervention which works effectively to discourage the occurrence of social comparisons will be more effective at protecting body image. However, the occurrence of appearance-focused social comparison is thought to be very difficult to change, partly because they tend to occur spontaneously, and partly because women knowingly choose to compare themselves to other attractive women, since they represent the standards by which they expect themselves to be judged (Tiggemann, 2022). The tendency of women to assess their level of attractiveness relative to others has long been recognised (Leahey et al., 2007), with ‘upward’ comparisons towards targets who are perceived to have superior attributes being the most common (Fardouly et al., 2017). The emotional outcome of upward comparisons is thought to depend on whether an individual assimilates or contrasts their own appearance with a target. For example, a perception of similarity between the individual and an attractive target can lead the individual to develop more positive self-evaluations of their own appearance through association (Mussweiler, 2001; Kang & Liu, 2019). If the upward comparison target’s status is also seen by the individual as being personally achievable, then upward comparisons can create positive feelings of inspiration and hope (Lockwood & Kundu, 1997). In this manner, it has been argued that ‘benign envy’ (Meier & Schäfer, 2018) towards a comparison target on social media who is believed to deserve their status, can motivate positive change in other users. The nature of interpersonal appraisals including perceived similarity to a target and the achievability of the target’s appearance may therefore be expected to influence how appearance comparisons impact women online, beyond the simple consideration of whether or not comparisons to a target are made. While there is some evidence of the role of interpersonal appraisals on social media (e.g. Kang & Liu, 2019), more experimental research is needed to explore how they impact body image outcomes in response to appearance-focused images.

1.3. The current study

Currently, no clear intervention strategy exists for protecting female body image during exposure to idealised appearance images on social media. However, popular online trends which link to mechanisms of coping, for example self-compassion and humour, may provide insight into how digital messages could be used to protect body image online. At present, there are a number of gaps in the literature. Firstly, previous studies have included an array of generalised self-compassion statements (e.g. about the importance of kindness and understanding) with more directive statements about the body, such that the specific utility of appearance-related, self-compassion (ARSC) messages cannot be easily determined. Secondly, while a prominent trend on social media and an important mechanism for coping, the utility of humour for protecting body image online is relatively unexamined. Research is yet to fully consider the impact of humorous messages on body dissatisfaction, and the application of satirical themes to critique accepted appearance norms. Finally, we believe the examination of social comparison in relation to idealised images has generally overlooked the importance of interpersonal appraisals such as appearance achievability or the desire to look like a comparison target, beyond simple consideration of the direction of comparison.

The current research was designed to address the identified gaps in the literature through a series of three linked experiments. Experiment 1 explored the respective impact of ARSC and humorous body image messages posted to Instagram on mood, appearance and life satisfaction outcomes. To do this, participants completed a simulated Instagram browsing task in one of three conditions. Each condition contained a mix of fitspiration images with either images containing ARSC messages, images containing humorous messages or appearance-neutral images. To further explore the results of Experiment 1, Experiment 2 used an induction task to influence the extent to which participants would feel that their body image is negatively impacted by Instagram, and thereby influence the perceived relevance of the ARSC or humorous messages to the participants’ personal situation. This was done before completing a simulated browsing task similar to that used in Experiment 1. Finally, Experiment 3 confirmed the impact of the ARSC and humorous messages
on Instagram, during a free browsing task on Instagram itself. This browsing task exposed participants to one of 5 profiles which contained fitspiration images on their own, or mixed with images containing ARSC messages, humorous messages or one of two different types of appearance-neutral images. In this final experiment, measures of interpersonal appraisal were taken after the browsing task to explore how this was related to the impact of appearance comparisons made by participants. As a whole, the experiments provide a structured approach to evaluating and comparing the effectiveness of different body image health communications on Instagram that are aimed at reducing body dissatisfaction and harmful appearance comparisons.

2. Experiment 1

A controlled browsing task was used to investigate the relative effectiveness of two different types of body image message conditions (ARSC or humorous) for combatting the negative impact of fitspiration images, when compared to a third condition of appearance-neutral Instagram images which contained no depictions of, or reference to, physical appearance. All conditions contained a mix of fitspiration images with either images containing ARSC messages, images containing humorous messages or appearance-neutral images. The inclusion of the appearance-neutral condition was to ensure that any benefit from the exposure to the body image messages could be attributed to the content of the message and was not simply a result of diluting the fitspiration themes with another type of Instagram content.

We hypothesised that body image messages depicting ARSC or humorous themes would mitigate some of the negative impacts of fitspiration images on mood, appearance and life satisfaction outcome measures, compared to appearance-neutral images. Specifically, it was expected that the outcome measures of negative mood, appearance dissatisfaction and appearance comparison taken in the study would decrease, and life satisfaction increase, after viewing images in the ARSC or humorous conditions, whereas the opposite effect would occur in the appearance-neutral image condition, resulting in a significant interaction between image condition and time (Hypothesis 1).

2.1. Method

2.1.1. Participants

Participants were 241 women aged between 18 and 25 years old (M = 22.04, SD = 2.13), who were purposively sampled based on being active Instagram users. Participants were not filtered by ethnicity, but were all current residents of the UK. A priori power analysis using G*Power (Faul et al., 2007) revealed a minimum sample size of 120 would be required for the proposed experimental design (assuming a significance level, α = 0.05, effect size of Cohen’s f = 0.25 and assumed power of 80%).

2.1.2. Materials

2.1.2.1. Stimuli. All participants viewed a total of 32 Instagram posts in one of three conditions. All conditions contained the same 24 fitspiration images and were mixed with 8 images containing either ARSC messages (ARSC condition), humorous messages (humorous condition) or appearance-neutral images (appearance-neutral condition). This followed a 4:1 ratio as used in previous research (Slater et al., 2017). All conditions contained the same fitspiration images to test whether the ARSC or humorous messages could help to reduce the negative effects of exposure to appearance-focused images, compared to appearance-neutral images.

Fitspiration images were sourced from Instagram searches using the terms ‘fitspiration’ and ‘fitpo’. The images depicted young women with thin and toned bodies either engaging in exercise, or posing in exercise clothes or in exercise settings, with captions encouraging exercise and fitness. An initial pool of 50 images presented as Instagram posts were piloted with an independent sample of 30 raters to identify the best examples of fitspiration (taking into account the combination of the image and its accompanying caption), based on the definition ‘physical fitness-based images of women in exercise clothes, designed to motivate and inspire others to engage in exercise and healthy lifestyles’. The final images included women from different ethnic backgrounds at a ratio of 18 white to 6 other ethnicities, to approximately reflect the ethnic balance of the UK population.

The 8 images containing ARSC messages encouraging body positivity were sourced through Instagram and internet searches using terms such as ‘appearance self-compassion’, ‘body acceptance’, ‘body positivity’. ARSC images consisted of quotes with simple backgrounds (e.g. patterns), for example ‘Speak to your body the way you would speak to your closest friend about hers... with kindness and compassion’. An initial pool of 16 images was piloted to identify the 8 which best fit the definition ‘messages encouraging kind appearance-related self-talk, the acceptance of physical flaws as natural and commonplace, and the ability to recognise when to avoid overidentification with appearance concerns’.

The 8 images containing humorous body image messages were sourced through Instagram and internet searches using the terms ‘funny body positivity’, ‘body image meme’. All images contained satirical quotes with a supporting cartoon-like picture, for example ‘How to get a bikini body: put a bikini on a body’. An initial pool of 16 were piloted to identify the 8 which best fitted the definition ‘funny messages using humour, irony or exaggeration to expose and criticise unrealistic appearance standards for women (e.g. preference for thin and toned bodies)’.

Appearance-neutral images were sourced via Instagram and focused on ‘interior design’ following similar previous studies (e.g. Slater et al., 2017). These images depicted rooms or furniture only and contained no people. The initial pool of 16 were piloted to identify the 8 which were rated lowest for ‘containing themes relating to female body image or that may inspire positive or negative emotion’.

All pilot testing was completed by a sample of 30 independent raters from the target demographic. All images were presented within Instagram posts. For all posts, author captions were included which reinforced the theme definitions for each image type and were consistent with the specific theme. The captions were either adapted from real Instagram posts or created to match the image. For example, for the fitspiration posts captions were reflective of real fitspiration captions online (e.g. ‘summer bodies are made in the winter’). For the ARSC and humorous posts, captions were consistent with the specific theme (e.g. ‘embrace the flaws that make you human’ for ARSC). For appearance-neutral posts, captions were reflective of the interior design theme (e.g. ‘homes with charm’). Identifying characteristics including profile names, likes and comments were removed from each post.

2.1.3. Measures

2.1.3.1. Sample characteristics. Participants self-reported their height and weight, which was used to calculate the average BMI for the sample. Participants also self-rated their own level of Instagram use. This was done on a scale from 0 (Never use Instagram) to 100 (Constantly use Instagram).

2.1.3.2. Pre- and post-exposure measures. Following previous studies (e.g. Heinberg & Thompson, 1995; Brown & Tiggesmann, 2016) visual analogue scales (VAS) were used to measure state changes in outcome variables at pre- and post-exposure. Using 100-point sliding scales, from ‘not at all’ (0) to ‘very much’ (100), participants rated how they felt right now, in that moment, in response to each question prompt. VAS scales are believed to be less prone to memory effects and therefore more sensitive to brief experimental manipulations, and have been shown to correlate well with more detailed psychological measurements of mood and body dissatisfaction (Heinberg & Thompson, 1995).
2.1.3.2.1. State mood. Five VAS mood indicators were used (angry, happy, anxious, depressed, confident). The two positive mood adjectives were reverse scored and the five ratings were combined into one measure of negative mood (from 0 to 100). The internal reliability for negative mood in the current sample was acceptable at both pre-exposure (α = 0.77) and post-exposure (α = 0.74).

2.1.3.2.2. State body and facial dissatisfaction. VAS scales were used to measure 7 different aspects of physical appearance. Four items assessed participants’ evaluation of their own bodies (body shape, body weight, body fat, physical appearance) and 3 items assessed participants’ feelings regarding their facial appearance (facial attractiveness, skin complexion, hair condition) following similar attributes to those used in the Body Esteem Scale BES-R (Frost et al., 2018). VAS scales were scored such that higher values indicated greater dissatisfaction with the body or face. Both measures overall showed acceptable internal reliability at pre-exposure (body dissatisfaction: α = 0.93; facial dissatisfaction α = 0.63) and post-exposure (body dissatisfaction: α = 0.95; facial dissatisfaction α = 0.77).

2.1.3.2.3. State appearance comparison. State appearance comparison was measured using an adapted form of Tiggemann and McGill’s (2004) State Appearance Comparison Scale. Participants rated how much they thought about their appearance and how much they compared their overall body, specific body parts and their facial attractiveness to other women (from ‘not at all’ to ‘a lot’). At pre-exposure, participants were asked to imagine the extent to which they would compare themselves to others or think about appearance, if they were using Instagram right now. At post-exposure, participants answered based on the extent to which they had compared themselves to others, or thought about appearance, during the browsing task. VAS ratings were combined to provide a single measure of state appearance comparison which showed acceptable internal reliability at pre-exposure (α = 0.90) and post-exposure (α = 0.91).

2.1.3.2.4. State body shame. State body shame was assessed using items adapted from the Body Image Shame Scale (BISS) (Duarte et al., 2015) and the Body Shame sub-scale of the Objectified Body Consciousness Scale (OBCS) (Dakanalis et al., 2017). The resulting scale consisted of 6 statements (e.g. ‘It bothers me to see my body undressed’) where participants indicated how true each statement was for them from ‘not true for me’ to ‘completely true for me’. This measure of state body shame had acceptable internal reliability at pre-exposure (α = 0.88) and post-exposure (α = 0.91).

2.1.3.2.5. State life satisfaction. State life satisfaction was assessed using a modified version of the Satisfaction with Life Scale (SWLS; Diener et al., 1984). The scale consists of 5 statements (e.g. ‘The conditions of my life are excellent.’) where participants indicate their level of agreement with each statement from ‘strongly disagree’ to ‘strongly agree’. While typically used as a trait measure, the SWLS has shown sufficient sensitivity during clinical interventions to detect change (Pavot, Diener (1993)), and items on the scale are thought to be sensitive to situational factors (Joshanloo, 2022). To increase the ability of the scale to detect acute changes, participants were instructed to answer scale items by thinking about how they feel ‘right now’, with responses being measured on a 100-point sliding scale. The measure had acceptable internal reliability at pre-exposure (α = 0.91) and post-exposure (α = 0.94).

2.1.4. Procedure.

Participants were recruited through the online participant service Prolific, where it was advertised as an ‘Instagram browsing study’. Reference was not specifically made to body image, but potential participants were informed that they would see images of other women and be asked to answer questions about their appearance, prior to consenting to take part. Any participants who felt they would not be comfortable doing this were advised not to take part. Participants received a small financial reward for taking part, commensurate with other comparable studies on the Prolific platform. The experiment was conducted online using Qualtrics XM. After providing basic demographic information participants completed all pre-exposure state measures. Participants were then randomly assigned to one of the three experimental conditions: (i) ARSC condition, (ii) humorous condition or (iii) appearance-neutral condition. In each condition, the experimental images (ARSC, humorous or appearance-neutral) were combined with the 24 fitness images, in a random order. All images were presented within Instagram posts and were shown as a slideshow. To ensure engagement with the stimuli, each image was presented individually for a minimum of 15 s before participants were able to move on to the next slide. Participants were also instructed, prior to completing the browsing task, that they would be given a short memory test regarding the images they had seen at the end of the study. The time participants spent viewing each image was also recorded, with the average for each image ranging from 19 to 25 s, and an average of 23 min being taken to complete the full study. After the browsing task and memory test, participants then completed all measures for a second time to capture post-exposure scores.

2.2. Results

2.2.1. Preliminary analysis.

The average BMI for the sample was 24.40 (SD = 6.44) and their self-rated level of Instagram use was high (M = 80.90; 95% CI 78.01–83.79).

Preliminary one-way ANOVAs confirmed that participants in the three conditions did not differ in terms of age (F(2, 238) = 0.26, p = .772, η² = .002), BMI (F(2, 238) = 0.95, p = .390, η² = .008), self-reported Instagram use (F(2, 238) = 0.22, p = .805, η² = .002), or the total time spent observing the images (F(2, 238) = 0.46, p = .630, η² = .004).

Further preliminary one-way ANOVAs confirmed that there were no baseline differences for negative mood (F(2, 238) = 0.58, p = .563, η² = .005), body dissatisfaction (F(2, 238) = 0.43, p = .651, η² = .004), facial dissatisfaction (F(2, 238) = 0.152, p = .859, η² = .001), body shame (F(2, 238) = 0.12, p = .887, η² = .001), appearance comparison (F(2, 238) = 0.37, p = .694, η² = .003), or life satisfaction (F(2, 238) = 0.32, p = .723, η² = .003) across the three conditions.

2.2.2. Effect of time and image condition.

Pre- and post-exposure scores for each of the six dependent measures in each image condition are shown in Table 1. To test Hypothesis 1, a series of 3 (image condition) × 2 (time) mixed design factorial ANOVAs were conducted using the main dependent measures (negative mood, body dissatisfaction, facial dissatisfaction, body shame, appearance comparison and life satisfaction).

These tests showed no significant two-way interaction to occur between time and condition in the case of all six dependent measures: negative mood (F(2, 238) = 2.97, p = .053, η² = .024), body dissatisfaction (F(2, 238) = 2.51, p = .084, η² = .021), facial dissatisfaction (F(2, 238) = 1.76, p = .175, η² = .015), body shame (F(2, 238) = 0.87, p = .419, η² = .007), appearance comparison (F(2, 238) = 1.96, p = .143, η² = .016), or life satisfaction (F(2, 238) = 2.80, p = .063, η² = .023). This suggests that any changes in pre- and post-exposure scores were consistent across the different image conditions, for each measure. Hypothesis 1 was therefore rejected.

With respect to the main effect of time, a significant increase in scores was found from pre- to post-exposure with respect to: negative mood (F(2, 238) = 14.14, p < .001, η² = .056), body dissatisfaction (F(2, 238) = 38.12, p < .001, η² = .138), facial dissatisfaction (F(2, 238) = 29.66, p < .001, η² = .111) and body shame (F(2, 238) = 8.30, p = .004, η² = .034), although no significant difference in appearance comparisons was observed (F(2, 238) = 0.49, p = .487, η² = .002). A significant decrease in life satisfaction scores was also found from pre- to post-exposure (F(2, 238) = 11.86, p < .001, η² = .047). With respect to image condition, no significant main effects were found for any of the six measures at the p < .05 level.
The case of digital disclaimers, it may be that the manipulations intro-
duction was observed between image condition and pre/post-
change in appearance comparison scores was observed from pre- to post-
seen when appearance-neutral images were included. No significant
range of mood, appearance and life satisfaction outcome measures.

Influence its persuasive capability (Petty et al., 1983). Personal
personal involvement with the topic of a message has been identified to
protect women images online, they may be unlikely to heed messages attempting to
consider themselves to be negatively influenced by appearance-focused
participants may not have recognised that the ARSC or humorous messages
did not successfully reduce the number of appearance com-
parisons made by participants during the browsing tasks. It could be that
messages did not successfully reduce the number of appearance com

Contrary to expectations, mean body dissatisfaction, facial dissatis-
faction, body shame negative mood scores increased from pre- to
post-exposure, in all three image conditions, and no significant inter-
action was found between time and image condition. This suggests that the inclusion of either ARSC or humorous message types in the simulated
browsing task failed to prevent the increases in appearance dissatisfac-
tion and negative mood typically found after viewing fitspiration im-
ages, nor did their impact differ markedly from the pattern of results seen when appearance-neutral images were included. No significant change in appearance comparison scores was observed from pre- to post-
exposure when aggregated across the different image conditions, and no interaction was observed between image condition and pre/post
appearance comparison scores. As speculated by Tigge mann (2022) in the case of digital disclaimers, it may be that the manipulations intro-
duced failed to combat the influence of fitspiration images because the messages did not successfully reduce the number of appearance com-
parisons made by participants during the browsing tasks. It could be that
brief exposure to such messages is, therefore, not sufficient to reduce
the risk of negative outcomes from Instagram use was high would experi-
ence greater negative mood, appearance and life satisfaction outcomes after browsing fitspiration images, compared to participants who were
led to believe that their risk was low (Hypothesis 2a).
We hypothesised that participants who were led to believe that their
risk of negative outcomes from Instagram use was high would experi-
ence greater negative mood, appearance and life satisfaction outcomes after browsing fitspiration images, compared to participants who were
led to believe that their risk was low (Hypothesis 2b).

3. Experiment 2

In Experiment 2, the level of personal involvement with body image
concern during Instagram use, and thus the relevance of body image messages, was explored by introducing a manipulation to the same
design used in Experiment 1. This manipulation was intended to either emphasise or minimise participants’ perception of personal involvement
with negative body image outcomes during Instagram use, and thus increase or reduce how relevant the messages (ARSC or humorous)
would be to participants’ beliefs about their own body image.

We hypothesised that participants who were led to believe that their
risk of negative outcomes from Instagram use was high would experi-
ence greater negative mood, appearance and life satisfaction outcomes after browsing fitspiration images, compared to participants who were
led to believe that their risk was low (Hypothesis 2a).
We further hypothesised a three-way interaction between image condition, message relevance and time, whereby browsing body image
messages in the ARSC and humorous conditions would reduce the
negative impact of the fitspiration images to a greater extent for par-
ticipants who were led to believe that their risk of negative outcomes from Instagram use was high, compared to participants who were led to
believe that their risk was low (Hypothesis 2b).

3.1. Method

3.1.1. Participants
Participants comprised a new sample of 189 females aged 18–25
years (M = 20.29, SD = 2.77), who were active Instagram users.
Approximately half of the participants were recruited through a
departmental participant pool scheme at our institution, with the
remaining participants being recruited through the participant recruit-
ment service Prolific. Participants were not filtered by ethnicity but were
all current residents of the UK. A priori power analysis using G*Power
(Faul et al., 2007) revealed a minimum sample size of 162 would be
required for the proposed experimental design (α = 0.05, effect size f =
0.25, assumed power of 80%).

<table>
<thead>
<tr>
<th>Table 1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Experiment 1. Pre- and Post-exposure means (M) and standard deviations (SD) for all outcome variables (n = 241).</strong></td>
</tr>
<tr>
<td><strong>Outcome Variable</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Negative mood</td>
</tr>
<tr>
<td>(18.81)</td>
</tr>
<tr>
<td>Face</td>
</tr>
<tr>
<td>Body dissatisfaction</td>
</tr>
<tr>
<td>Appearance comparison</td>
</tr>
<tr>
<td>(27.12)</td>
</tr>
<tr>
<td>Body shame</td>
</tr>
<tr>
<td>(27.47)</td>
</tr>
<tr>
<td>(60.47)</td>
</tr>
<tr>
<td>Life satisfaction</td>
</tr>
<tr>
<td>(28.70)</td>
</tr>
<tr>
<td>(23.96)</td>
</tr>
<tr>
<td>(26.05)</td>
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<tr>
<td>(23.96)</td>
</tr>
<tr>
<td>(23.73)</td>
</tr>
<tr>
<td>Appearance comparison</td>
</tr>
<tr>
<td>(65.50)</td>
</tr>
<tr>
<td>(28.23)</td>
</tr>
<tr>
<td>(25.88)</td>
</tr>
<tr>
<td>(25.64)</td>
</tr>
</tbody>
</table>

2.3. Brief discussion

The aim of Experiment 1 was to demonstrate that embedding ARSC or humorous body image messages would be an effective means of off-
setting the negative impacts of exposure to fitspiration images, across a range of mood, appearance and life satisfaction outcome measures.

We further hypothesised a three-way interaction between image condition, message relevance and time, whereby browsing body image
messages in the ARSC and humorous conditions would reduce the
negative impact of the fitspiration images to a greater extent for par-
ticipants who were led to believe that their risk of negative outcomes from Instagram use was high, compared to participants who were led to
believe that their risk was low (Hypothesis 2b).
3.1.2. Materials and Measures

The Instagram images and outcome measures used in Experiment 2 exactly replicated those used in Experiment 1, with participants being randomly allocated to one of the same three experimental conditions (ARSC, humorous or appearance-neutral). Experimental images were mixed with the same 24 fishtpiration images in each condition at the identical ratio (4:1) used in Experiment 1, with all images being displayed using the same simulated browsing task procedure.

3.1.3. Induction task

To influence the degree to which participants recognised themselves to be at personal risk of negative body image outcomes when using Instagram, and thus influence whether they considered the messages to be relevant to their situation, an experimental manipulation was introduced. Participants read one of two 250-word passages describing the impact of Instagram use on young women in their age group in the UK. The aim of the passage was to invoke participants’ awareness of the negative consequences of social media and their own level of personal risk, prior to completing the browsing task. Both passages provided factual information about the impact Instagram can have on body image. However, the specific wording of each paragraph was manipulated either to emphasise (e.g. higher personal relevance, greater severity of consequences) or minimise (e.g. lower personal relevance, lower severity of consequences) participants’ personal risk of negative body image from Instagram use. For example, one sentence read ‘9/10 women in your age group who use Instagram are unhappy with their bodies’ (high relevance) compared to ‘Some young women who use Instagram are unhappy with their bodies’ (low relevance). The information used in the passages was informed by the #StatusofMind report (Royal Society for Public Health, 2017).

A manipulation check was conducted to ensure the induction task successfully manipulated the relevance of the messages. This assessed participants’ perceived level of personal risk of body image harm from Instagram use. Participants were asked to rate how susceptible to body image harm they felt personally, answering on a 100-point sliding VAS from ‘not at all susceptible’ to ‘extremely susceptible’. Time spent completing the induction task was also measured to ensure that participants paid adequate attention to the paragraph (average reading time, around 1 m 30 s).

3.1.4. Procedure

The experiment was advertised using similar recruitment information to Experiment 1. Those who participated via Prolific received a small financial reward for taking part, whereas those who participated via the institutional participant pool scheme received course credit instead of a monetary reward. The experimental procedure replicated that used in Experiment 1 exactly, with the exception that after completing the pre-exposure measures, participants were randomly allocated to the high (n = 95) or low (n = 94) relevance condition, and read the appropriate paragraph of text relevant to their condition. Following this, participants were then randomly allocated into one of the three experimental conditions to complete the Instagram browsing task, followed by the post-exposure measures, as in Experiment 1.

3.2. Results

3.2.1. Preliminary analysis

The mean BMI of the sample was 24.17 (SD = 5.25) and their self-rated level of Instagram use was high (M = 74.47; 95% CI 71.22–77.72). Preliminary one-way ANOVAs confirmed that participants did not differ in terms of age (F(5, 183) = 0.57, p = .723, ηp² = .015), BMI (F(5, 183) = 0.93, p = .466, ηp² = .025), self-rated Instagram use (F(5, 183) = 1.16, p = .329, ηp² = .031), or total time spent viewing the Instagram posts (F(5, 183) = 0.93, p = .466, ηp² = .025) as a function of their allocation to the three image conditions or two relevance conditions.

Further preliminary one-way ANOVAs confirmed that there were no baseline differences for negative mood (F(2, 186) = 0.94, p = .393, ηp² = .010), body dissatisfaction (F(2, 186) = 1.83, p = .163, ηp² = .019), facial dissatisfaction (F(2, 186) = 2.84, p = .061, ηp² = .030), body shame (F(2, 186) = 1.17, p = .323, ηp² = .012), appearance comparison (F(2, 186) = 1.15, p = .318, ηp² = .012), or life satisfaction (F(2, 186) = 0.20, p = .816, ηp² = .002) across the three image conditions.

A one-way ANOVA confirmed that the induction task successfully manipulated perceived personal relevance, whereby participants in the high relevance condition (M = 56.73; SD = 26.13) considered themselves significantly more susceptible to body image harm on Instagram (F(1, 187) = 8.63, p = .004, ηp² = .044) after reading the passage compared to participants in the low relevance condition (M = 45.86; SD = 24.64).

Further preliminary checks confirmed that there were no baseline differences between participants allocated to the high and low relevance conditions with respect to negative mood (F(1, 187) = 0.20, p = .650, ηp² = .010), body dissatisfaction (F(1, 187) = 0.66, p = .420, ηp² = .003), facial dissatisfaction (F(1, 187) = 0.13, p = .716, ηp² = .001), body shame (F(1, 187) = 0.04, p = .843, ηp² = .000), appearance comparison (F(1, 187) = 0.47, p = .492, ηp² = .003), or life satisfaction (F(1, 187) = 1.73, p = .191, ηp² = .009).

3.2.2. Effect of time, image condition and perceived personal relevance

Pre- and post-exposure scores for each of the six dependent measures in each image condition as a function of the personal relevance manipulation are shown in Table 2. In order to test whether the effects of the image condition on exposure outcome measures would be greater when participants perceived their risk of negative outcomes from Instagram use to be greater, a series of three-way mixed ANOVAs 3 (image condition) x 2 (relevance condition) x 2 (time) were conducted on the six dependent measures.

With respect to Hypothesis 2a, no significant two-way interactions were observed between time and the message relevance induction with respect to all six dependent measures: negative mood (F(1, 183) = 2.32, p = .129, ηp² = .013), body dissatisfaction (F(1, 183) = 1.15, p = .286, ηp² = .006), facial dissatisfaction (F(1, 183) = 0.11, p = .736, ηp² = .001), body shame (F(1, 183) = 0.04, p = .840, ηp² = .000), appearance comparison (F(1, 183) = 3.52, p = .062, ηp² = .019), or life satisfaction (F(1, 183) = 1.38, p = .241, ηp² = .007). This suggests that leading participants to perceive their risk of negative outcomes from Instagram use to be greater, did not influence changes in mood, appearance dissatisfaction, appearance comparison or life satisfaction measures, any differently from those who perceived their risk to be low. Therefore, Hypothesis 2a was rejected.

With respect to Hypothesis 2b, no significant three-way interactions were observed between image condition, message relevance and time, with respect to all six dependent measures: negative mood (F(2, 183) = 1.24, p = .292, ηp² = .013), body dissatisfaction (F(2, 183) = 0.65, p = .525, ηp² = .007), facial dissatisfaction (F(2, 183) = 0.05, p = .949, ηp² = .001), body shame (F(2, 183) = 0.58, p = .56, ηp² = .006), appearance comparison (F(2, 183) = 0.47, p = .626, ηp² = .005), or life satisfaction (F(2, 183) = 0.32, p = .728, ηp² = .003). This suggests the impact of browsing body image messages in the ARSC and humorous conditions on pre- and post-exposure measures was not affected by the manipulation of perceived risk of negative outcomes from Instagram use. Therefore, Hypothesis 2b was rejected.

In addition, with respect to the three-way ANOVAs conducted, no significant two-way interaction effects were observed between image condition and time, or between image condition and message relevance, at the p < .05 significance level. Furthermore, no significant main effects of image condition or message relevance condition were observed at p < .05.

With respect to the main effect of time, significant differences were observed for 3 of the 6 outcome measures. Facial dissatisfaction significantly increased (F(1, 183) = 7.00, p = .009, ηp² = .037) from pre- to post-exposure, while appearance comparison significantly decreased (F
Table 2

<table>
<thead>
<tr>
<th>Outcome Variable</th>
<th>Condition</th>
<th>High relevance</th>
<th>Low relevance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ARSC (n = 33)</td>
<td>Humorous (n = 20)</td>
<td>Appearance-Neutral (n = 42)</td>
</tr>
<tr>
<td>Pre M(SD)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative mood</td>
<td>46.87 (22.24)</td>
<td>39.49 (17.20)</td>
<td>38.13 (17.17)</td>
</tr>
<tr>
<td>Post M (SD)</td>
<td>46.22 (22.32)</td>
<td>42.75 (18.17)</td>
<td>42.55 (18.89)</td>
</tr>
<tr>
<td>Body dissatisfaction</td>
<td>68.82 (26.63)</td>
<td>67.25 (25.77)</td>
<td>58.90 (25.95)</td>
</tr>
<tr>
<td>Post M (SD)</td>
<td>70.30 (27.07)</td>
<td>67.10 (24.73)</td>
<td>63.80 (24.27)</td>
</tr>
<tr>
<td>Facial dissatisfaction</td>
<td>52.94 (22.63)</td>
<td>56.30 (21.56)</td>
<td>53.12 (23.04)</td>
</tr>
<tr>
<td>Post M (SD)</td>
<td>56.68 (24.69)</td>
<td>57.20 (26.12)</td>
<td>57.85 (24.78)</td>
</tr>
<tr>
<td>Body shame</td>
<td>54.18 (24.25)</td>
<td>52.15 (30.18)</td>
<td>46.17 (26.24)</td>
</tr>
<tr>
<td>Post M (SD)</td>
<td>54.35 (24.18)</td>
<td>52.65 (29.51)</td>
<td>47.32 (27.65)</td>
</tr>
<tr>
<td>Appearance comparison</td>
<td>61.98 (25.18)</td>
<td>55.78 (24.92)</td>
<td>58.45 (27.80)</td>
</tr>
<tr>
<td>Post M (SD)</td>
<td>60.20 (26.66)</td>
<td>56.41 (28.54)</td>
<td>57.59 (29.08)</td>
</tr>
<tr>
<td>Life satisfaction</td>
<td>46.48 (22.16)</td>
<td>41.93 (21.42)</td>
<td>44.36 (22.37)</td>
</tr>
<tr>
<td>Post M (SD)</td>
<td>43.58 (23.42)</td>
<td>40.97 (23.33)</td>
<td>41.39 (22.87)</td>
</tr>
</tbody>
</table>

(1, 183) = 5.28, p = .023, \( \eta^2_p = .028 \), and life satisfaction significantly decreased (F(1, 183) = 19.92, p < .001, \( \eta^2_p = .098 \); from pre- to post-exposure. No significant differences in negative mood (F(1, 183) = 1.06, p = .304, \( \eta^2_p = .006 \), body dissatisfaction (F(1), 183) = 0.97, p = .325, \( \eta^2_p = .005 \) or body shame (F(1, 183) = 0.98, p = .325, \( \eta^2_p = .005 \)) were observed from pre- to post-exposure.

### 3.3. Brief discussion

The aim of Experiment 2 was to determine whether differences in the 6 mood, appearance and life satisfaction outcome variables would occur between the three image conditions when participants felt body image messages were more personally relevant to them. The perceived personal relevance of a health topic to an observer is thought to increase the persuasiveness of health-related communication (Braverman, 2008; Kreuter & Wray, 2003). However, contrary to our hypothesis, manipulating the personal relevance of the messages did not impact on the observed effectiveness of ARSC or humorous messages. This suggests that, regardless of the apparent level of personal relevance or risk, neither of these two body image message types appeared to influence the impact of exposure to fitspiration images any differently than appearance-neutral images. It can be concluded that ARSC and humorous messages were, therefore, no more effective at countering the negative influence of fitspiration images than appearance-neutral images, even when participants felt the potential severity of body image harm from social media use was greater to them.

A further important observation was the absence of any interaction between message relevance and time. This indicates that, contrary to our hypothesis, participants who were led to believe that their risk of negative outcomes from Instagram use was higher did not experience greater negative outcomes after browsing fitspiration images, compared to those who were led to believe their risk was lower. This could be interpreted to suggest that with respect to body image, the experience of dissatisfaction or shame regarding one’s appearance is not strongly linked to the perception of being at risk. Interestingly, state appearance comparison was found to decrease after image exposure compared to before, regardless of the perceived personal relevance induction used.

This was contrary to previous research which has suggested that state appearance comparison increases after viewing fitspiration images (e.g. Jerinimo & Carraca, 2022). Since in Experiment 2, baseline ratings of the main outcome measures were collected prior to reading the relevance manipulation, it is likely that this text, in addition to the images, combined to influence state appearance comparisons. More specifically, it could be argued that reading any information drawing attention to the likelihood of body image harm when viewing fitspiration images, whether suggestive of high or low personal relevance, may serve to reduce appearance comparisons. Whilst a ‘no information’ control group was not used in Experiment 2, that would support a direct test of this assumption, it should be noted that the observed trend in Experiment 2 was different to that seen in Experiment 1 where no relevance manipulation was applied and no change in appearance comparisons was found after viewing images. Subsequent research could therefore further consider whether reading simple factual information about how Instagram and appearance comparisons can be negative for young women, might help to mitigate potential harmful body image effects.

Whereas Slater et al. (2017) found that self-compassion quotes about self-love or kindness to the person could be effective at protecting observers from some negative impacts of fitspiration, the findings of Experiments 1 and 2 suggest mood, appearance and life satisfaction outcome measures either worsened or remained unchanged after exposure to fitspiration images mixed with other message types used in the current study, including ARSC messages. Whilst this should not be taken to imply that viewing ARSC or humorous messages are harmful, it does suggest that overall they had no positive effect on body image-related outcomes. The difference in findings between these studies might be attributed to the appearance-related nature of the self-compassion messages used in the present study. As has been speculated by other authors (e.g. Tiggemann, 2022), body image messages, no matter how well-intentioned, may still draw attention to different aspects of appearance, and reinforce participants’ existing beliefs about their own body image or the physical attractiveness of the women in the fitspiration images. In this sense, it might be argued that any appearance-related message (whether framed positively through self-compassion or humour) which causes self-reflection on one’s own
appearance may not have the expected effect of protecting body image. Rather, it may be the distraction value of images which do not directly show images of female physical appearance which may have greater protective value. For example, Maddox (2021) reports that Instagram users described seeking images of cute animals as a form of resistance and rejection of typical social media appearance-focused content and as a way of retaining some autonomy over dominant image trends. Pet users described seeking images of cute animals as a form of resistance (i.e. images of cute animals) may serve to positively distract in influence how participants felt about their own appearance and their personal appraisals concerning how participants position their own goals and lifestyle to be better or worse than the target appearance was and how much participants desired to look like the target.

4. Experiment 3

Experiments 1 and 2 concluded that ARSC and humorous messages were no more effective at protecting against the negative impacts of fitspiration images than appearance-neutral images, during controlled browsing tasks. In Experiment 3, exposure to fitspiration images only was compared to ‘mixed’ browsing of fitspiration images which were combined with either ARSC, humorous, appearance-neutral or cute animal images. The aim here was to explore whether diluting fitspiration images with other types of image that do not contain images of women, rather than the inclusion of body image messages per se, would lead to reduced negative outcomes. The experiment also addresses whether images which have been typically associated with positive affect (i.e. images of cute animals) may serve to positively distract participants from negative appearance themes. The impact of interpersonal appraisals concerning how participants position their own goals and motivations with respect to the attainability of fitspiration is also explored. In this experiment, participants were exposed to Instagram images using a more naturalistic browsing task which involved accessing their own Instagram accounts to complete the browsing task within Instagram itself (rather than via a slideshow of sequentially presented images within Qualtrics as in Experiments 1 and 2). This was done to better replicate everyday use of the platform.

We hypothesised that participants who browsed fitspiration images only (mixed with no other images) would experience greater negative mood, appearance and life satisfaction outcomes compared to participants who viewed fitspiration images embedded alongside other images on Instagram (Hypothesis 3a).

We further hypothesised that participants who browsed fitspiration images alongside positive distractor images depicting animal ‘cuteness’ would experience fewer negative outcomes, compared to participants who viewed fitspiration images alongside body image (ARSC or humorous) messages or appearance-neutral interior design images (Hypothesis 3b).

Finally, we hypothesised that the specific nature of appraisals, made by participants towards the women in the fitspiration images, would influence how participants felt about their own appearance and their appearance comparison tendency after completing the browsing task (Hypothesis 3c).

4.1. Method

4.1.1. Participants

A further sample of 204 females, who were active Instagram users, were recruited. Participants were not filtered by ethnicity but were all current residents of the UK. A total of 14 participants were excluded from the analysis based on the time taken to complete the browsing task (< 1 min n = 6; > 10 min n = 4) or for failing the attention checks (failing to correctly identify ≥75% of the images used in the experiment during the memory test n = 4), leaving a total of 190 participants. Participants were aged 18–25 years (M = 22.16, SD = 2.07). A priori power analysis using G*Power (Faul et al., 2007) suggested a minimum sample size of 150 would be required for the proposed experimental design (α = 0.05, effect size f = 0.25, assumed power of 80%).

4.1.2. Materials

4.1.2.1. Stimuli. Five Instagram profiles were created for the purpose of the experiment. Each profile contained the same 24 fitspiration images from Experiment 1. One profile, the fitspiration only condition, contained only these 24 images, while the remaining 4 profiles included 8 additional images which were dispersed amongst the fitspiration images and served to dilute the fitspiration themes. The images were uploaded as posts to each of the Instagram profiles in a random order. The profiles were given generic names to associate them to the study, and participants were asked to browse the images as they would do while browsing other Instagram feeds. Participants were informed that that all images shown on the profile were real posts from the Instagram accounts of different users, but that the profile names, likes and comments had been removed. Participants were asked not to like or comment on any of the posts.

Each of the five Instagram accounts defined a different experimental condition. The 8 posts used for the ARSC condition, humorous condition and appearance-neutral condition were identical to those used in Experiment 1 (e.g. including identical author captions). A new condition was introduced consisting of 8 images of cute animals which were sourced through Instagram searches using terms such as ‘cute pets’. The 8 images were selected during pilot testing of 16 images based on the perceived ‘cuteness’ of the animal in each image.

4.1.3. Measures

All pre- and post-exposure measures used in Experiment 1 were replicated in the current experiment, with the inclusion of an additional measure to explore appearance comparisons made during the browsing tasks.

4.1.3.1. Appearance comparison: interpersonal appraisal. At post-exposure, 6 additional questions about appearance comparison were asked to explore the specific characteristics of comparisons made by participants during the browsing task. The measures recorded how similar participants perceived themselves to be to the female targets they had seen in the fitspiration images, how achievable the target’s appearance was and how much participants desired to look like the targets. Each item was measured on a 100-point VAS from ‘not at all’ to ‘very much’. The direction of the appearance comparisons made with the target’s body, face, and general lifestyle were also measured. Participants were asked to rate whether they considered their own appearance and lifestyle to be better or worse than the target’s they had seen. These ratings were taken on a 100-point scale from ‘worse’ (0) to ‘better’ (100), with the mid-point labelled ‘about the same’ (50) and were made collectively in response to all images seen.

4.1.3.2. Memory test. A post-exposure memory test was used to ensure participants paid attention to the browsing task. Twelve sets of images were created containing one image from the browsing task and another image showing a similar theme, but that had not been included in the browsing task. Participants were asked to identify which of the image pairs (A or B) had been included in the browsing task. Following the same ratio of images used in the browsing task (1:4), 8 image-pairs were fitspiration images and 4 image-pairs were of non-fitspiration images (e.g. ARSC), as relevant to the condition to which the participant had been assigned.

4.1.4. Procedure

This experiment was advertised using the same procedure as
Experiment 1, with all participants being recruited through the Prolific online service and receiving a small financial payment for taking part. The image browsing task took place within each participant’s own Instagram account with their responses being recorded through the Qualtrics XM online research platform. Participants first completed consent, demographic and pre-exposure measures within the online platform, before being randomly allocated to one of the five conditions to complete their browsing task. Once allocated to a condition, participants were provided with instructions directing them to use their own Instagram accounts to search for the named Instagram profile that was unique to their condition. Participants were instructed to ‘browse all of the images posted to this profile making sure to look at all of the posts. This can be done in any order, spending as much or as little time on each image and browsing up and down as you wish’. Participants spent on average 3 min and 34 s completing the browsing task. To ensure participants engaged actively with the task, they were informed prior to taking part that they would later be asked to complete a memory test regarding the images they had seen. In addition, as part of the browsing task participants were asked to select their three favourite images they had seen on the profile during the task and to send the links for these images, via Instagram, to the Experimenter. Participants spent an average of 2 min and 55 s completing this element of the task. After completing the Instagram browsing task, participants were directed to return to the Qualtrics platform in order to complete the remaining post-exposure measures and memory test.

4.2 Results

4.2.1 Sample characteristics

Participants had a mean BMI of 24.54 (SD = 6.15) and self-rated their use of Instagram to be high (M = 85.04; 95% CI 82.73–87.36). Preliminary one-way ANOVAs confirmed that participants in the five conditions did not differ in terms of their age (F(4, 185) = 1.32, p = .265, η² = .028), BMI (F(4, 185) = 1.47, p = .213, η² = .031), self-reported Instagram use (F(4, 185) = 0.42, p = .792, η² = .009), or time spent browsing the Instagram profile (F(4, 185) = 1.10, p = .357, η² = .023).

4.2.2 The impact of diluting fitspiration images

To explore whether diluting the fitspiration images with other image types during Instagram browsing would reduce the negative impact on the measures taken, regardless of whether dilution came from body image relevant messages (i.e. ARSC or humorous conditions) or other distractor images (i.e. appearance-neutral interior design images or images of cute animals), a series of one-way independent groups ANOVAs were performed. For this experiment, change scores were calculated for each of the 6 outcome variables, by subtracting the post-exposure scores from the pre-exposure scores, and planned comparisons were used to compare the change scores in the fitspiration only condition, to change scores observed in the remaining mixed conditions (ARSC, humorous, appearance-neutral interior design, cute animals).

Since Experiment 1 and 2 had already demonstrated there was no overall difference in the impact of ARSC, humorous or appearance-neutral images on the outcome measures, relative to each other, the rationale for this analysis was to test specifically whether diluting fitspiration images would lead to a different pattern of results compared to exposure to fitspiration imagery alone. For the change scores, larger, positive values indicated that the scores on the outcome measure had reduced following exposure to the images.

Six planned orthogonal comparisons were made using the SPSS LMatrix subcommand. For two of the planned comparisons, no significant difference was observed between the fitspiration only condition and the mixed conditions with respect to negative mood (F(1, 185) = 1.26, p = .263, η² = .007) or appearance comparison (F(1, 185) = 3.77, p = .054, η² = .020).

Four planned comparisons revealed significant differences between the fitspiration only condition and the mixed conditions with respect to body dissatisfaction (F(1, 185) = 8.41, p = .004, η² = .043), facial dissatisfaction (F(1, 185) = 5.02, p = .026, η² = .026), body shame (F(1, 185) = 12.63, p < .001, η² = .064) and life satisfaction (F(1, 185) = 4.50, p = .035, η² = .024). These results provide support for Hypothesis 3a since participants in the fitspiration only condition experienced significantly greater increases in body dissatisfaction, facial dissatisfaction and body shame and a significantly greater decrease in life satisfaction, compared to participants in the mixed conditions. Table 3 shows the mean change scores for each of the 6 dependent variables.

In order to test the prediction that positive images of cute animals would better mitigate the negative effects of the fitspiration images, compared to the other body image (ARSC and humorous) messages or appearance-neutral interior design images, a one-way independent MANOVA was conducted. This compared the 4 mixed conditions (excluding the fitspiration only condition) using the change scores for the 6 outcome measures as dependent variables. This revealed no significant multivariate effect of condition (F(18, 433.24) = 0.69, p = .821, η² = .026; Wilks’ Λ = .923).

In addition, 6 planned orthogonal comparisons confirmed there were no significant differences in the change scores between the cute animal condition and the other three mixed conditions (ARSC, humorous or appearance-neutral interior design) for all 6 outcome measures: negative mood (F(1, 158) = 0.01, p = .980, η² = .000), body dissatisfaction (F(1, 158) = 0.78, p = .380, η² = .005), facial dissatisfaction (F(1, 158) = 0.07, p = .78, η² = .000), body shame (F(1, 158) = 0.62, p = .432, η² = .004), appearance comparison (F(1, 158) = 0.79, p = .375, η² = .005) or life satisfaction (F(1, 158) = 0.18, p = .673, η² = .001). These results indicated that the mixed condition containing images of cute animals did not lead to significantly better outcomes than any of the other three mixed conditions. Therefore, Hypothesis 3b was rejected.

4.2.3 The role of appearance comparison: interpersonal appraisals

To assess the direction of comparisons relating to how participants evaluated their own body and facial appearance, and overall lifestyle, compared to the female images they had seen during the Instagram browsing task, comparison ratings were categorised into three groups. Ratings of Λ 44 were classified as upward comparisons (participants rated themselves to be ‘worse’ than the female targets), scores of 56 were classified as downward comparisons (participants rated themselves to be ‘better’ than the female targets) and scores 45 to 55 were considered as lateral comparisons (participants considered themselves as being no different from the targets). Across all conditions, upward comparisons (body n = 164; face n = 128; lifestyle n = 147) were more common than downward (body n = 12; face n = 22; lifestyle n = 23) and lateral (body n = 14; face n = 40; lifestyle n = 20) comparisons. This suggested that the majority of participants were engaging in upward comparisons to both the physical appearance and lifestyle of the women in the fitspiration images shown during the browsing tasks.

Participants were also asked to appraise their similarity to the female targets, how much they desired to look like the fitspiration women (t(189) = −2.28, p = .024, d = .17). For all three comparison attributes, participants considered their bodies (t(189) = −11.09, p < .001, d = −1.19), faces (t(189) = −11.09, p < .001, d = −1.19) and lateral (t(189) = −12.69, p < .001, d = −.92) to be worse than those of the female targets. To investigate the specific role played in the mood, appearance and life satisfaction outcomes by the manner in which fitspiration images

...


were evaluated, the relationships between the six interpersonal appraisal factors, with the post-exposure measures were examined across all conditions. Table 4 shows the zero-order correlations between the post-exposure mood, appearance and life satisfaction measures and interpersonal appraisal factors, and partial correlations for the same variables when controlling for pre-exposure scores. Generally, the relationships observed provide support for Hypothesis 3c since the data suggest that the different interpersonal appraisal scores of participants were significantly related to the outcome measures taken following the browsing tasks. However, not all the relationships remained significant after controlling for baseline levels of the relevant measure. The partial correlations support the idea that, when participants considered their own appearance to have greater similarity to the comparison target, their appearance, outcomes across the body image measures were more

Table 3

<table>
<thead>
<tr>
<th>Measure</th>
<th>Mean change in VAS rating [± 95% CI] for each Browsing Task Condition</th>
<th>Planned Comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fitspiration Only (n = 38)</td>
<td>ABSC (n = 39)</td>
</tr>
<tr>
<td>Negative mood</td>
<td>-1.11 [–5.05, 2.84]</td>
<td>3.81 [–0.99, 7.71]</td>
</tr>
<tr>
<td>Body dissatisfaction</td>
<td>-5.87 [–10.33, –1.41]</td>
<td>3.81 [–0.59, 8.22]</td>
</tr>
<tr>
<td>Facial Dissatisfaction</td>
<td>-4.19 [–8.07, –0.32]</td>
<td>2.32 [–1.51, 6.14]</td>
</tr>
<tr>
<td>Body shame</td>
<td>-7.12 [–10.80, –3.45]</td>
<td>0.79 [–2.84, 4.42]</td>
</tr>
<tr>
<td>Appearance comparison</td>
<td>-2.51 [–8.87, 3.85]</td>
<td>7.23 [0.95, 13.51]</td>
</tr>
<tr>
<td>Life Satisfaction</td>
<td>3.09 [0.05, 6.13]</td>
<td>0.45 [–2.56, 3.45]</td>
</tr>
</tbody>
</table>

Note. Negative mean values indicate an increase in the measure from pre-exposure to post-exposure.

Fig. 1. Experiment 3. Mean participant-target comparison ratings (± 95% CI) for interpersonal appraisal measures using 100-point visual analogue scales. Statistical data indicate single mean t-test probabilities (2-tailed) and effect size (Cohen’s d) values between sample mean and scale mid-point for each comparison rating (n = 190).

Table 4

<table>
<thead>
<tr>
<th>Comparison Ratings</th>
<th>Correlation Type</th>
<th>Post-Exposure Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Negative Mood</td>
</tr>
<tr>
<td>Similarity to target</td>
<td>r</td>
<td>-.41</td>
</tr>
<tr>
<td>Body Comparison</td>
<td>r</td>
<td>-.22</td>
</tr>
<tr>
<td>Facial Comparison</td>
<td>r</td>
<td>-.36</td>
</tr>
<tr>
<td>Target achievement</td>
<td>r</td>
<td>-.18</td>
</tr>
<tr>
<td>Lifestyle Comparison</td>
<td>r</td>
<td>-.21</td>
</tr>
<tr>
<td>Target achievement</td>
<td>r</td>
<td>-.17</td>
</tr>
<tr>
<td>Desire to look like target</td>
<td>r</td>
<td>-.26</td>
</tr>
</tbody>
</table>

1. p < .005 (Bonferroni corrected p value);
2. p < .001.
positive. Upward comparisons, where participants considered their body and facial appearance to be inferior to the comparison target’s appearance, led to poorer outcomes for appearance dissatisfaction, appearance comparison and life satisfaction, but not negative mood. Only upward body comparison, and not facial comparison, led to poorer outcomes for body shame when baseline levels were controlled. Upward lifestyle comparisons led to poorer outcomes for body and facial appearance dissatisfaction and life satisfaction only. Where participants desired to look like the comparison target to a greater extent, they experienced poorer outcomes for appearance dissatisfaction and appearance comparison, but not negative mood, body shame or life satisfaction. How achievable the targets’ physical appearance was for the observer was not related to any of the outcome measures, after controlling for baseline levels. Therefore, Hypothesis 3c was partially supported.

### 4.3. Brief discussion

The aim of Experiment 3 was to explore whether diluting fitspiration images with other image types, rather than the inclusion of body positive communication (ARSC or humorous messages) per se would lead to less negative outcomes for participants, and whether the use of other distraction (appearance-neutral interior design or cute animal images) would further improve this effect. In partial support of Hypothesis 3a, the results indicated that participants in the fitspiration only condition experienced significant increases in body dissatisfaction, facial dissatisfaction and body shame and significant decreases in life satisfaction, compared to participants in any of the four mixed conditions. This suggests that combining fitspiration posts with any of the other posts included in this study negated some of the negative effects of viewing the fitspiration images on their own. However, contrary to Hypothesis 3b there were no differences in outcome measures were observed between the mixed conditions. This suggests that positive distraction by using cute animal images was not more protective for body image than appearance-neutral interior design images or images containing body image-related messages.

Experiment 3 also aimed to explore how interpersonal appraisals with the target women would impact on the outcome measures. To this extent, Hypothesis 3c, that type of appraisal made would influence mood, appearance and life satisfaction outcomes after completing the browsing tasks, was partially supported by correlational evidence. These findings were consistent with the idea that contrasting or assimilating with a comparison target influences the outcome of upward comparisons (e.g. Mussweiler, 2001). The results add to the literature by evidencing that participants who consider themselves to be dissimilar from a comparison target, who they desire to look like, experience the greatest negative outcomes when browsing fitspiration images, particularly with respect to appearance dissatisfaction and level of state appearance comparison. Previous research has suggested that where the status or attributes of an upward comparison target are considered personally achievable (e.g. their attractive appearance could be matched by the observer), then upward comparisons may result in more positive feelings and inspiration (Lockwood & Kunda, 1997). It might therefore, have been expected that perceiving the appearance of the fitspiration women to be more achievable would be associated with more positive outcomes in the current study. However, this was not the case for any of the mood, appearance and lifestyle outcomes, when baseline levels were controlled. This implies that the connection between these outcomes and a fitspiration-style body type being considered achievable, was better accounted for by the observer’s pre-existing level of dissatisfaction or shame with their appearance, rather than as a direct result of their experience when viewing images. It was found in the present study that participants overall tended to rate themselves as being dissimilar to the females in the images seen, with a strong desire to look like them, but generally indicating an average possibility of achieving this appearance (with respect to absolute levels of the measures taken). It is therefore likely that the dynamic range of scores on these variables was artificially restricted in the current study, by the use of fitspiration images. Future research could further explore the interaction between similarity, achievability and desirability, across a broader range of body types to better understand their combined effect on body image outcomes.

5. General discussion

The current research builds on previous literature by exploring the protective impact of ARSC and humorous body image messages when posted alongside fitspiration content. The results show that images containing ARSC or humorous messages did not influence the negative effects of fitspiration images on users any different than appearance-neutral images (Hypothesis 1), irrespective of whether participants recognised that the messages were relevant to their personal body image (Hypothesis 2b). Both ARSC and humorous messages also failed to impact state appearance comparison. In Experiment 3, the addition of a fitspiration only condition demonstrated that combining fitspiration images with any other image used in the study, regardless of type, negated the impact observed in the fitspiration only condition (Hypothesis 3a and Hypothesis 3b). This suggests that mixing fitspiration posts with other types of Instagram post that does not contain appearance-related images, may be enough to counter some of the short-term impacts of exposure to fitspiration themes. This finding has important methodological implications as it draws into question the appropriateness of the use of fitspiration-only control conditions when making claims about the protective influence of different image types. It can be argued that there is a benefit to the inclusion of other image types during appearance-focused Instagram use, which results not from the content of the images per se, but from the diluting effect they create on appearance themes. Future studies could therefore usefully consider the balance of appearance-neutral to appearance-focused images used in experimental research, in order to more carefully evaluate and make recommendations regarding the level of image dilution needed to create a beneficial effect on body image-related outcomes. This conclusion is consistent with the recent analysis of body positive and science/culture Facebook pages (Fardouly et al., 2023) which resulted in no differences in body dissatisfaction outcomes being found between the two page types.

While in general self-compassion interventions have shown positive effects for body image concern and eating behaviour (Turk & Waller, 2020), the findings of the current study suggest that ARSC messages are not effective at promoting positive body image during acute exposure to fitspiration images. This is in contrast to previous research, which has shown benefits from self-compassion quotes about the whole self (Slater et al., 2017). The current findings may have implications for the use of social media messages about body image alongside appearance-focused social media content, since humorous messages were also found to be ineffective. Taken together, with the findings of previous research that neither disclaimer or body positive captions were able to reduce the negative impact of exposure to appearance-focused images, it might be suggested that the influence of images is too great to be countered by short messages alone (Brown & Tiggemann, 2020). This notion might also be consistent with the disparity in the effectiveness of using humorous parody images (Slater et al., 2019), versus the humorous messages in the current experiments which also aimed to critique the common sense of beauty standards. Combined with the lack of support for disclaimer-type labels, it may be that rather than employing message-based techniques, efforts to protect body image online should look to create strategies which are focused on image-based interventions. For example, one strategy could be to utilise efforts that seek to increase the representation of larger body sizes, where exposure to body positive posts including images of women with a range of body sizes can lead to increased body satisfaction and appreciation, compared to exposure to the thin-ideal and appearance-neutral images (Nelson et al., 2022). Furthermore, unlike exposure to fitspiration images of thin women, exposure to ‘curvy fitspiration’ (exercise images of women with
larger body sizes) is known to lead to improvements in body satisfaction and reduced weight bias among women (Cha et al., 2022). This suggests that even within appearance-focused domains the impact of more inclusive images may be beneficial.

State appearance comparison was measured in the current research to explore the potential of the ARSC and humorous messages for reducing appearance-based comparison, since this is a known mediator of the relationship between appearance-focused social media use and body dissatisfaction (Hendrickse et al., 2017). However, evidence from all three experiments suggested that neither ARSC or humorous message types had any impact on levels of appearance comparisons made by participants, nor did fitspiration images shown in isolation have a significant impact on appearance comparison in Experiment 3. It may be that acute exposure to body image messages intended to dissuade people from making comparisons, are not sufficient on their own to combat a practiced tendency to make upward comparisons on social media (Verduyn et al., 2020). In this way, combatting the frequency of appearance comparisons may only be feasible through more comprehensive intervention strategies.

Tigemann et al. (2019b) have suggested that women may actively choose to compare themselves with attractive women on social media as they set the standard for which they expect themselves to be judged. This idea is linked to comparison research that has argued for the motivational quality of some types of upward comparison (Lockwood & Kunda, 1997). The current study adds to this evidence base by showing that there are relationships between how participants feel after browsing Instagram and some of the interpersonal appraisals they make with comparison targets during browsing (Hypothesis 3c). Taken together, rather than trying to reduce instances of upward comparison, which are thought to be largely automatic and therefore inevitable (Bocage-Barthélemy et al., 2018), alternative methods should look to influence the nature of interpersonal appraisals made with upward comparison targets as a means of making comparisons less harmful. In other words, rather than trying to prevent comparisons, research should look to explore how similar women perceive themselves to be to others online, as a means of manipulating the nature of comparisons from being disconcerting to be more inspirational. As previous research has demonstrated, upward comparisons can result in benign envy which encourages motivation for self-improvement (Meier & Schäfer, 2018), rather than harmful dejection and body dissatisfaction. Some longitudinal evidence has suggested that increased exposure to attractive appearance-focused images was associated with both social comparison, and inspiration, via social media up to four months later (Schreurs et al., 2022). However, exercising for appearance reasons has also been associated with feelings of guilt and negative body image (Hurst et al., 2017) and disengagement with goals (Mailey et al., 2018) over time. Further research is therefore needed to better understand the longer term outcomes, and conditions under which, positive benefits of inspiration derived from social media images may occur.

The current research has also demonstrated the potential impact of exposure to fitspiration images on life satisfaction. Whilst some previous research has demonstrated the negative impact on one’s own life satisfaction levels of viewing positive posts made by strangers (de Vries et al., 2018), the current study further shows that fitspiration content may pose a threat to life satisfaction. This finding makes sense when considering that fitspiration content often promotes body ideals through the portrayal of a healthy and active lifestyle (Bossepple et al., 2016). Future research may further explore the specific effects.

Overall, the implications of this study suggest that encouraging women to avoid browsing Instagram feeds of images that are exclusively appearance-focused (e.g. feeds associated with appearance-focused hashtags such as ‘#fitspiration’) will help to protect their body image online, by diversifying the range of content to which they are exposed. Similarly, encouraging women to follow some Instagram accounts unrelated to appearance, may help protect users online, due to the dilution effect this creates on their own feed. With respect to future digital intervention strategies intended to protect body image online, the findings of this study imply that a wealth of different possibilities may exist, since intervention designs do not need to be tied to the topic of body image in order to promote potential beneficial effects. On the contrary, body image-related messages embedded within social media pages that are intended to be protective may have no additional benefits over other forms of non-appearance focused content.

5.1. Study limitations

The findings of the current experiments should be taken with the following limitations in mind. Firstly, the experiments sampled from a demographic of young women in the UK, therefore the results may not generalise to other groups of women. In the present study, no data pertaining to the cultural background of participants were collected which may limit the applicability of the current findings to populations with a similar ethnic mix to that found within the UK. Thin-ideal internalisation and weight concern are known to differ between different ethnic or cultural groups (Rakhkovskaya & Warren, 2014). For example, some authors have noted the current trend of the desirability of ‘slim-thick’ figures which are newer to white-centred media, but have been long established among other cultures (McComb & Mills, 2022). Negative body image outcomes have also been shown to be greater among women from different ethnic backgrounds in response to white-focused images in mainstream media (Thomas, Kleyman, 2020). It follows that both comparisons made towards, and the desirability of the fitspiration figures included in the present study to some degree will be influenced by both the ethnic background of the observer and the target. Whilst a range of ethnicities were included within the fitspiration images used in the present study, in an attempt to compensate for these differences, more detailed and routine measurement of observer-target differences in ethnicity may be required in future similar studies to more fully consider these effects.

Secondly, in all three experiments, exposure to the different types of image was relatively brief. Consequently, the conclusions drawn regarding the efficacy of different images to protect body image are based on, and may only apply to, single exposures that are short in duration. Whilst it may be argued that this is perhaps consistent with the nature of images to which people are exposed during typical social media use, it remains unclear what the impact of exposure to different message types would be over longer periods of exposure, both with respect to fitspiration images and ARSC or humorous images.

Thirdly, since all three experiments took place online, it is not possible to guarantee that participants were fully attending to the image browsing tasks. Whilst safeguards were used, including timing participants’ responses and conducting memory tests to check for engagement, it remains possible that participants did not interact with the content of images as they would do typically in their own time. Controlled browsing tasks were used in Experiments 1 and 2 which may increase confidence that the findings are likely to reflect the efficacy of the messages themselves, rather than a failure of the images to capture user attention which could have been the case in Experiment 3. The use of more naturalistic approaches or observation of participants during real-world browsing may therefore be warranted to further reduce the gap between experimental findings and everyday engagement with social media.

5.2. Conclusions

The current study provides evidence that images containing ARSC and humorous body image messages are no more effective at protecting social media users from negative appearance and life satisfaction effects than appearance-neutral images, when displayed alongside fitspiration images. Neither type of message had an impact on state appearance comparison. However, unexpectedly the results evidence that the negative impact of fitspiration imagery is sensitive to the presence of
other posts which do not contain images of women, regardless of whether the posts include messages related to body image or images unrelated to physical appearance. This is an important consideration for the design of future studies in this field. Given the range of content types that participants are simultaneously exposed to online, in order to generalise claims about the effects of fitspiration to typical Instagram use, future research should develop methodologies which better imitate the range of content consumed online. The current research has also demonstrated the importance of interpersonal appraisals, made in relation to comparison targets, which may have potential implications for alternative methods for combating the harmful body image effects of social media images.

CRediT authorship contribution statement

Bryony Davies: Conceptualization, Methodology, Investigation, Formal analysis, Writing – original draft, Writing – review & editing.
Mark Turner: Supervision, Conceptualization, Methodology, Formal analysis, Writing – original draft, Writing – review & editing.
Julie Uddell: Supervision, Conceptualization, Methodology.

Declaration of Competing Interest

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Data Availability

Data will be made available on request.

References


Effect on women


[369] B. Davies et al.
B. Davies et al.


