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The impact of no-makeup selfies on young women's body image

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ABSTRACT

Viewing idealized images of attractive women on social media can negatively impact women's body image and mood. Although women tend to post idealized images on social media, some also post natural no-makeup images. This study examined the impact of viewing both made up and no-makeup selfies on young women's body image and mood. Female undergraduate students ($N = 175$) viewed either images of a woman wearing no makeup interspersed among idealized made up images of that woman (no-makeup condition), only idealized made up images of a woman (makeup only condition), or appearance-neutral travel images (control condition). Participants rated their state appearance satisfaction and mood pre- and post-exposure to the study images and rated their desire to change aspects of the face, hair, and skin post-exposure to the study images. Participants in the makeup only condition were less satisfied with their facial appearance and were more motivated to change aspects of their face, hair, and skin after exposure to the study images. Viewing the study images had no impact on the body image or mood of participants in the no-makeup condition. These results suggest that no-makeup selfies may reduce any negative impact of idealized made up images on women's facial concerns.

1. Introduction

In 2014, there was an online campaign encouraging women around the world to post images of themselves wearing no makeup on social media in an attempt to raise money for cancer research (Time, 2014). The #nomakeupselfie campaign went viral with celebrities and 'everyday' women being praised for bravely exposing their bare faces online. Celebrities, such as the U.K. singer Jess Glynne (jessglynne, 2018, October 12), have launched similar no-makeup selfie campaigns in 2018. Although these #nomakeupselfie campaigns were short lived, makeup artists (also called beauty influencers) continue to post natural no-makeup images of themselves on social media. Makeup artists are becoming increasingly popular on social media (The Guardian, 2014), with some artists having up to 11 million followers on sites such as Instagram and YouTube (Forbes, 2017). Makeup artists who post images of themselves on social media with and without makeup have been praised by some of their followers for promoting appearance acceptance (Huffington Post, 2015). However, research is yet to determine whether viewing no-makeup selfies has a positive impact on women's body image.

Research shows that viewing idealized images of attractive women in both traditional media (e.g., magazines, television; Grabe, Ward, & Hyde, 2008) and on social media (e.g., Facebook, Instagram; Cohen, Newton-John, & Slater, 2017; Fardouly & Vartanian, 2016; Hogue & Mills, 2019; Vendemia & DeAndrea, 2018) can make women feel unhappy with their appearance and increase negative mood. The majority of images in traditional media, such as magazines, contain attractive women who match the societal beauty ideal (Wasylkiw, Emms, Meuse, & Poirier, 2009), and women usually post the most attractive images of themselves on their social media profiles (Pounders, Kowalczyk, & Stowers, 2016; Zhao, Grasmuck, & Martin, 2008). Furthermore, images in traditional and social media can be edited and enhanced using flattering lighting, photo editing programs, and filters to increase the attractiveness of the women in the images (McLean, Paxton, Wertheim, & Masters, 2015; Reaves, Hitchon, Park, & Yun, 2004). Thus, when viewing social and traditional forms of media, young women may be exposed to a large number of idealized images, which may result in increased appearance dissatisfaction. Given that appearance dissatisfaction is associated with a host of negative outcomes, such as poor academic performance (Florin, Shults, & Stettler, 2011; Xie et al., 2006), depression (Paxton, Neumark-Sztainer, Hannan, & Eisenberg, 2006), and eating disorders (Stice, 2002; Stice & Van Ryzin, 2018), research is needed to find ways to reduce any negative impact of viewing idealized images on women's body image.

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Sociocultural models of body image suggest that appearance comparisons are partly responsible for the negative effect of idealized images on women's body image (Cash, 2012; Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999), and there is a growing body of literature supporting that assertion (Myers & Crowther, 2009). Social comparison theory posits that people have an innate drive to compare themselves to others in order to determine their progress and standing on aspects of their lives, and that comparisons to people judged to be better than oneself can lead to negative psychological outcomes (Festinger, 1954). Consistent with this theory, research shows that women often compare their appearance to others in their everyday lives (Leahey & Crowther, 2008), especially to those judged to be more attractive than themselves (i.e., upward comparisons; Fardouly, Pinkus, & Vartanian, 2017), and that comparisons to attractive others can negatively impact women's body image and mood (Myers & Crowther, 2009). Although less common, women also compare their appearance to others judged to be just as attractive (i.e., lateral comparisons) or less attractive (i.e., downward comparisons) than them (Fardouly et al., 2017; Leahey & Crowther, 2008), and those comparisons can have a positive impact on women's body image (Leahey, Crowther, & Ciesla, 2011; Myers & Crowther, 2009).

Facial attractiveness is one particular aspect of appearance that women can compare. Facial features play a significant role in attractiveness ratings of women (Confer, Perilloux, & Buss, 2010; Jones, 2001; Tucker, 1985), and previous research suggests that facial comparisons may be common among young women (Jones, 2001). Viewing images of attractive female faces, as well as full-body images of thin women with attractive faces, has been found to make women less satisfied with their own overall physical and facial attractiveness than viewing images containing no people (Newton & Minhas, 2005; Richins, 1991; Vendemia & DeAndrea, 2018). In addition, research suggests that browsing social media, such as Facebook, may be more harmful for women's face, skin, and hair-related discrepancies (i.e., the extent to which women want to change aspects of their face, skin, and/or hair) than their weight and shape-related discrepancies (Fardouly, Diedrichs, Vartanian, & Halliwell, 2015), perhaps because women post more portrait images than full-body images on social media (Haferkamp, Eimler, Papadakis, & Kruck, 2012). Extrapolating from that research, viewing idealized images of women wearing makeup on social media may make women more dissatisfied with their overall appearance, and their facial appearance in particular, and make them want to change aspects of their face, skin, and hair.

There is evidence to suggest that women are judged to be more attractive when wearing makeup than when wearing no makeup (Cash, Dawson, Davis, Bowen, & Galumbeck, 1989; Gueguen & Jacob, 2011; Jones & Kramer, 2016; Osborn, 1996). Thus, when viewing portrait images of women wearing no makeup (e.g., no-makeup selfies), women have a greater opportunity to judge the women in the images to be just as attractive or less attractive than themselves, which could have a less negative impact on women's body image. Furthermore, viewing natural no-makeup images of a woman may reduce any negative impact of viewing idealized made up images of that woman because viewers can normalize the person's appearance and attribute their attractiveness in part to the makeup, which may reduce the number and extremity of upward appearance comparisons made to that woman. In contrast, it is possible that viewing images of a person both with and without makeup may increase women's appearance dissatisfaction if they judge the person to be highly attractive under both conditions.

The vast majority of young people in Western Society use social media (89–96% in Australia, U.K., and U.S.; Australian Bureau of Statistics, 2016; Lenhart, 2015; Office for National Statistics, 2017), and spend around two hours per day browsing platforms, such as Facebook and Instagram (Cohen, Newton-John, & Slater, 2018; Fardouly & Vartanian, 2015). Given the popularity of social media among young people and the large number of idealized images they are likely to be exposed to online, it is important to find ways to reduce the potential negative impact of viewing those images on women's body image and mood. The aims of the present study were to: (1) investigate the impact of viewing no-makeup images of a woman interspersed with other idealized images of that woman wearing makeup, on women's mood, overall appearance satisfaction, facial appearance satisfaction, and their desire to change aspects of their face, hair, and skin (i.e., face, hair, and skin discrepancies); and (2) investigate whether this effect differs from viewing only idealized images of a woman wearing makeup (relative to appearance-neutral control images). Women tend to present the most attractive version of themselves on social media (Pounders et al., 2016; Zhao et al., 2008), and makeup artists and women involved in the no-makeup selfie campaigns only posted a small number of images of themselves wearing no makeup on social media. Thus, to increase external validity and to be consistent with the behavior of makeup artists and women in the no-makeup selfie campaign, women in the no-makeup condition were shown no-makeup images interspersed with idealized made up images of a woman rather than no-makeup images alone. Consistent with many users' experiences when browsing a person's social media profile, women in each of the study conditions were shown a sequence of images of the same woman.

Given that viewing no-makeup images may give participants the opportunity to make lateral or downward appearance comparisons to the woman in the images, we hypothesized that viewing no-makeup images interspersed with made up images of a woman (no-makeup condition) would lead to less negative mood, more overall appearance satisfaction and facial appearance satisfaction, and less face, hair, and skin discrepancies, than viewing only idealized made up images of the woman (makeup only condition). Because participants in both the no-makeup and makeup only conditions viewed images of a highly attractive woman, we hypothesized that participants in those conditions would report more negative mood, less overall appearance and facial appearance satisfaction, and more face, hair, and skin discrepancies than participants in a control condition who viewed appearance-neutral images.

2. Method

2.1. Participants

Participants were 175 female undergraduate students aged 18–25 years old (M = 19.26; SD = 1.55), from a large Australian university. The mean body mass index (BMI; kg/m^2) of participants was 22.78 (SD = 4.35). The majority of participants identified as Caucasian (n = 99; 56.57%), 53 (30.29%) identified as Asian, 14 (8.00%) identified as Middle Eastern, and 9 (5.14%) identified as 'other.' Participants were recruited through the psychology participant pool and were given course credit for their participation. Participants were randomly allocated to one of three conditions; no-makeup condition (n = 66; experimental condition), makeup only condition (n = 66; experimental condition), or appearance-neutral control condition (n = 43; control condition). A larger number of participants were assigned to the experimental conditions than to the control condition in order to increase the statistical power to find differences between the experimental groups, which was the primary aim of this study. Power analysis conducted with the software GPower (Erdfelder, Faul, & Buchner, 1996) revealed that the study had more than 80% statistical power to detect moderate to large effect sizes, but less than adequate statistical power (< 80%) to detect small effects (below Cohen's f = 0.12). There were no signifi-

cant differences between conditions in age, $F(2, 172) = 0.47$, $p = .63$, BMI, $F(2, 170) = 1.45$, $p = .24$, or ethnicity, $\chi^2(6) = 2.60$, $p = .86$.

2.2. Materials

2.2.1. Study images

For the experimental conditions (no-makeup condition, makeup only condition), images were taken from three young female makeup artist's public Instagram pages. All of the makeup artists posted images of themselves with and without makeup. The three makeup artists matched the current societal beauty ideals (e.g., thin and toned body, large lips; Buote, Wilson, Strahan, Gazzola, & Papps, 2011; Cafri et al., 2006; Jacobi & Cash, 1994). Three natural no-makeup portrait images were taken from each of the makeup artists' pages. The no-makeup images revealed any skin discoloration and blemishes on the women's faces. The women were looking straight at the camera and were either captured with a neutral facial expression or smiling. Nine idealized portrait images of the women wearing makeup were also taken from each of the makeup artists' pages.

The majority of the images (86%) were selfies (i.e., images taken of the woman by the woman) and contained either the woman's face and neck or the woman's face, neck, and upper torso. The makeup worn by the women in those images was designed to enhance their natural features (e.g., black mascara, black eyeliner, nude or pink lipstick, brow fillers) and did *not* contain bright colors (e.g., brightly colored eyeshadow or glitter). It was obvious that the women were wearing makeup in the images but the amount and type of makeup worn was similar to that of many young women (makeup artists or not) in their everyday lives. Before and after makeup images were *not* included in this study. The no-makeup images were taken in a different setting from each other and a different setting from any of the made-up images.

In order to generalize the findings of the present study beyond just one target (makeup artist), participants in the no-makeup and makeup only conditions were randomly shown images of *one* of the three women (i.e., makeup artists). All participants were shown nine images. Participants in the no-makeup condition were shown three no makeup images and six idealized made up images (a random selection of the nine idealized images) of one of the three women, and participants in the makeup only condition were shown nine idealized made up images of one of the three women.

For the control condition, nine images were taken from another woman's travel-focused public Instagram page. The images contained the exteriors of houses around the world. None of the control images contained people. Similar to previous experimental research on exposure to idealized social media images (e.g., Brown & Tiggemann, 2016), participants in each of the study conditions (no-makeup, makeup only, control) were show nine images for 10 s each in a random sequence (i.e., one at a time).

2.2.2. State negative mood and appearance satisfaction

As used in previous media exposure research (Heinberg & Thompson, 1995; Prichard & Tiggemann, 2012), computer-based visual analogue scales (VAS) were used to measure state negative mood, overall appearance satisfaction, and facial appearance satisfaction both before and immediately after exposure to the study images. Participants were asked to rate how they feel "right now" by moving a vertical marker to the appropriate place on a horizontal line with endpoints labeled *not at all* (0) to *very much* (100). Participants rated the items 'depressed,' 'anxious,' 'discouraged,' 'confident' (reverse coded), and 'happy' (reverse coded), which were averaged to form a measure of negative mood (pre-exposure $\alpha = .70$, post-exposure $\alpha = .74$). The items 'satisfied with the way you look' and 'pleased with your appearance' were averaged to form a measure of overall appearance satisfaction (pre-exposure $\alpha = .95$, post-exposure $\alpha = .95$). Further, the items 'satisfied with your facial appearance' and 'pleased with your facial complexion' were averaged to form a measure of facial appearance satisfaction (pre-exposure $\alpha = .87$, post-exposure $\alpha = .90$). To disguise the purpose of the study, participants also rated the items 'satisfied with your social life,' 'satisfied with your financial status,' and 'satisfied with your relationship status.'

2.2.3. State appearance discrepancy

Participants' state face, hair, and skin-related discrepancies were measured using the state version of the Self-Discrepancy Index (SDI; Dittmar, Beattie, & Friese, 1996; Fardouly et al., 2015; Halliwell & Dittmar, 2006). Participants were asked to describe three aspects of themselves that they would ideally like to change right now. Participants were *not* prompted to describe aspects of their appearance and could report non-appearance aspects (e.g., time management or confidence). After describing the aspect of themselves they would like to change, participants rated how different they would like to be from what they actually are (magnitude; 1 = *a little different*, 5 = *extremely different*), and how important that difference is to them (psychological salience; 1 = *not important*, 5 = *extremely important*). We measured participants' face, hair, and skin discrepancies in addition to their facial appearance satisfaction (VAS measure described above) because we wanted to see if participants spontaneously reported wanting to change aspects of their face, skin, and/or hair (discrepancy measure) in addition to reporting being dissatisfied with their facial appearance when prompted to think about that aspect of their appearance (satisfaction measure). For the discrepancy measure, aspects reported by participants were coded as face, hair, and skin appearance discrepancies if they explicitly referred to aspects of the face, hair, or skin (e.g., "no pimples," "smaller nose," "eyebrows"). Given that participants were specifically asked to report *aspects* of themselves that they wanted to change, very few participants reported wanting to change their overall appearance ($n = 8$). Therefore, we did not report participants' overall appearance discrepancies. Two independent coders (the first author and a research assistant) rated the responses with a high level of inter-rater agreement (Cohen's $\kappa = .98$). The magnitude and salience ratings for any face, hair, and skin-related aspects were multiplied and then summed for each individual to create a single score for each measure (range = 0–75), with higher scores representing more state face, hair, and skin discrepancies.

2.2.4. State appearance comparisons

To test whether participants in the experimental conditions varied in the amount and direction of appearance comparisons made to the woman in the study images, participants in those conditions (not the control condition) completed the State Appearance Comparison Scale (SACS; Tiggemann & McGill, 2004) and a measure of comparison direction. For the SACS, using a 7-point scale, participants rated the extent to which they thought about their appearance when viewing the images (1 = *no thought about my appearance*, 7 = *a lot of thought about my appearance*), the extent to which they compared their overall appearance to the woman in the images (1 = *no comparison*, 7 = *a lot of comparison*), and the extent to which they compared specific body parts to the woman in the images (1 = *no comparison*, 7 = *a lot of comparison*). Responses to those three questions were summed to form a measure of appearance comparison tendency ($\alpha = .92$). For the comparison direction measure, participants rated whether they thought the woman in the images was *much more attractive than them* (5), *slightly more attractive than them* (4), *just as attractive as them* (3), *slightly less attractive than them* (2), or *much less attractive than them* (1). Participants in the experimental conditions also indicated how physically attractive they thought the woman was on 5-point scale (1 = *not at*

all, 7 = *very much*), in order to examine whether viewing no-makeup images influenced the perceived attractiveness of the target.

2.3. Procedure

Participants signed up for a study on the impressions people form of others online. Only females aged 18–25 years old were eligible for this study. Participants came into the laboratory and were tested in individual cubicles in groups of one to three. All of the study images and measures were viewed/completed on a computer. After providing informed consent, participants completed the pre-exposure VAS measure of state negative mood, overall appearance satisfaction, and facial appearance satisfaction. They were then told that they would be presented with a series of images taken from a woman's Instagram page, and were asked to form an impression of the woman who posted the images online. Participants were randomly assigned to one of three conditions via Qualtrics (the survey software) in which they viewed: (a) three portrait images of the woman without wearing makeup interspersed with six idealized portrait images of the woman wearing makeup (no-makeup condition); (b) nine idealized portrait images of the woman wearing makeup (makeup only condition); or (c) nine appearance-neutral travel images (control condition). Participants in the no-makeup condition and the makeup only condition were randomly shown images of one of three potential women/targets. All images were presented in a random order and were presented on the screen for a minimum of 10 s each. To ensure that participants attended to the study images, during exposure they were asked to indicate the extent to which each image was representative of the type of images that are posted on social media (1 = *not at all*, 4 = *very much*).

Following exposure to the study images, participants completed the state discrepancy measure, the post-exposure VAS measure of state negative mood, overall appearance satisfaction, and facial appearance satisfaction, and the appearance comparison measures (experimental conditions only). In keeping with the cover story, participants then rated their impression of the woman who posted the images on Instagram on a variety of traits (e.g., happy, likable, popular). Participants then reported how often they view images/posts/videos related to wearing makeup when on social media (5-point scale; 1 = *never*, 5 = *always*), and how often they wear makeup (e.g., foundation, mascara, eyeliner) in their everyday lives (5-point scale; 1 = *never*, 5 = *always*). Finally, participants reported their age, ethnicity, height and weight (used to calculate BMI), and were asked whether they recognized the woman in the images (outside of the study). All participants were fully debriefed on completion of the study. Macquarie University's ethics committee approved this study.

3. Results

3.1. Preliminary analyses

Data were checked for outliers using the outlier labeling rule, which multiplies the interquartile range (IQR) by 2.2 (Hoaglin, Iglewicz, & Tukey, 1986). Six outliers were identified and were removed from further analyses. Missing data were handled with pairwise deletion. Overall, there was 4.00% missing data across all variables of interest in the study. All of the variables had less than 2.90% missing data. A Little's MCAR test showed that the data were missing completely at random.

On average, participants reported that they "sometimes" to "often" view images, posts, or videos related to wearing makeup when on social media ($M = 3.42$, $SD = 1.11$), and that they "sometimes" to "often" wear makeup in their everyday lives ($M = 3.43$, $SD = 1.07$). Univariate ANOVAs showed that participants randomly assigned to the study conditions did not significantly differ on their frequency of viewing makeup-related posts on social media, $F(2, 172) = 2.69$, $p = .07$, $\eta_p^2 = .03$, or on their frequency of wearing makeup in their everyday lives, $F(2, 172) = 0.94$, $p = .39$, $\eta_p^2 = .01$. Overall, 41 participants (31.06%) in the experimental conditions recognized and correctly named the women (makeup artists/beauty influencers) in the study images. The number of participants who recognized the targets did not differ between the experimental conditions, $F(1, 130) = 0.31$, $p = .58$, $\eta_p^2 = .002$. It should also be noted that the pattern of results did not change when conducting the study analyses with and without those participants. Nevertheless, because parasocial relationships (i.e., one-sided relationships) with celebrities may influence the effect of viewing idealized images on women's body image (Young, Gabriel, & Sechrist, 2012), we controlled for target recognition (1 = recognized, 2 = did not recognize) in all further analyses.

3.2. Negative mood, appearance satisfaction, facial satisfaction, and discrepancies

Repeated measures ANCOVAs, controlling for target recognition, indicated no significant time by condition interactions for negative mood, $F(2, 165) = 1.08$, $p = .34$, $\eta_p^2 = .01$, or overall appearance satisfaction, $F(2, 171) = 0.45$, $p = .64$, $\eta_p^2 = .01$. There was, however, a significant time by condition interaction for facial appearance satisfaction, $F(2, 171) = 3.33$, $p = .04$, $\eta_p^2 = .04$. See Table 1 for means for the outcome variables pre-and post-exposure to the study images. Post hoc simple effects analyses revealed that participants' facial appearance satisfaction decreased in the makeup only condition from pre- to post-exposure to the study images, $F(1, 172) = 16.44$, $p < .001$, $d = -0.40$, but there was no change in facial satisfaction over time for participants in the no-makeup condition, $F(1, 172) = 0.32$, $p = .57$, $d = -0.10$, or control condition, $F(1, 172) = 2.77$, $p = .10$, $d = -0.24$. Facial appearance satisfaction did not significantly differ between conditions at Time 1 (pre-exposure), $F(2, 172) = 0.35$, $p = .70$, or Time 2 (post-exposure), $F(2, 172) = 0.76$, $p = .47$.

A univariate ANCOVA, controlling for target recognition, showed significant main effects of condition on participants' face, hair, and skin discrepancies, $F(2,170) = 3.63$, $p = .03$, $\eta_p^2 = .04$. As seen in Table 1, pairwise comparisons with Bonferroni adjustments showed that participants in the makeup only condition reported more face, hair, and skin discrepancies ($d = -0.58$) than participants in the control condition. There were no significant differences in face, hair, and skin discrepancies between participants in the no-makeup and control conditions, or the makeup only and no-makeup conditions.

3.3. Appearance comparisons

The following analyses were conducted only with participants in the experimental conditions (not the control) because they were shown images containing people and thus had the opportunity to make appearance comparisons. Univariate ANCOVAs, controlling for target recognition, showed that there were no significant differences in the frequency of making appearance comparison, $F(1, 129) = 0.03$, $p = .87$, $\eta_p^2 < .001$, or the direction of comparisons made, $F(1, 129) = 0.08$, $p = .79$, $\eta_p^2 = .001$, during exposure to the study images between participants assigned to the no-makeup or makeup only conditions. See Table 1 for the mean scores within each condition. A univariate ANCOVA also revealed that there was no difference in perceived physical attractiveness of the target for participants assigned to the no-makeup or makeup only condition, $F(1, 129) = 0.76$, $p = .38$, $\eta_p^2 = .01$. As seen in Table 1, participants rated the targets to be highly attractive in both conditions.

Table 1
Means (standard deviations) for all outcome variables, pre- and post-exposure to the study images.

	No-Makeup Condition		Makeup Only Condition		Control Condition	
	Pre-Exposure	Post-Exposure	Pre-Exposure	Post-Exposure	Pre-Exposure	Post-Exposure
Negative Mood	30.06 (15.16)	32.31 (18.05)	28.95 (14.89)	29.33 (15.00)	26.83 (12.01)	28.86 (14.66)
Appearance Satisfaction	53.83 (20.49)	54.04 (21.68)	54.26 (25.47)	52.57 (25.59)	56.28 (22.08)	55.40 (20.14)
Facial Satisfaction	55.00 (19.91)	54.23 (21.26)	56.23 (25.84)	50.71 (26.47)	58.73 (21.55)	55.93 (19.13)
Face, Hair, & Skin Discrepancy	–	10.67 (11.08) [a,b]	–	11.21 (12.33)[a]	–	5.02 (7.58)[b]
Comparison Frequency	–	9.58 (5.00)	–	9.50 (5.56)	–	–
Comparison Direction	–	4.32 (0.79)	–	4.36 (0.85)	–	–
Target Physical Attractiveness	–	6.18 (0.84)	–	6.03 (1.07)	–	–

Note: Face, hair, and skin discrepancy, comparison frequency, comparison direction, and target physical attractiveness were only measured post-exposure to the study images. For the discrepancy measure, means with different letters significantly differ at $p < .05$.

4. Discussion

The present study examined the impact of viewing both made up and no-makeup images on women's mood, overall appearance satisfaction, facial appearance satisfaction, and face, hair, and skin discrepancies. Viewing idealized made up images (selfies) of attractive women taken from Instagram reduced young women's facial appearance satisfaction and lead them to want to change more aspects of their face, hair, and skin than women who viewed appearance-neutral control images. Importantly, viewing natural no-makeup images of those women in addition to their idealized made up images reduced the impact of the idealized images on women's facial appearance satisfaction and discrepancies, although the difference between the no-makeup and makeup only conditions did not reach significance. Viewing a combination of both no-makeup and idealized made up images of attractive women did not have a significantly worse impact on women's facial appearance satisfaction and face, hair, and skin discrepancies than viewing appearance-neutral control images. Viewing idealized made up images, with or without the addition of no-makeup images, did not significantly impact women's overall appearance satisfaction or mood.

The findings of the present study suggest that viewing idealized portrait images (selfies) of attractive women wearing makeup on social media may specifically impact women's face-related concerns, rather than their concerns about their overall physical appearance. These results are consistent with those of Newton and Minhas (2005), and are perhaps not surprising given that participants in both studies were only shown idealized images of faces, not full bodies. Given the large number of portrait images and selfies posted to social media (Haferkamp et al., 2012), the results of the present study add to those of previous research (Fardouly et al., 2015; Tiggemann, Hayden, Brown, & Veldhuis, 2018), suggesting that browsing social media may be particularly damaging for women's facial appearance satisfaction and discrepancies. Thus, it is important for future research to continue to examine users' facial appearance concerns in the context of social media and selfie activities.

To our knowledge, the present study was the first to examine the impact of viewing no-makeup images posted on social media on women's body image. The results of the present study suggest that viewing a small number no-makeup selfies on social media may be one way to counteract or buffer against some of the negative impacts of viewing attractive and idealized images of others on women's face-related concerns. The mechanism responsible for this effect, however, is unknown. Women who viewed no-makeup images among other, idealized, made up images of women reported making the same amount of appearance comparisons and were just as likely to make upward comparisons to the target, as women who only viewed the idealized images. Therefore, our prediction that no-makeup selfies may give women an opportunity to make lateral or downward comparisons was not supported. Another explanation for the results of the present study is that viewing no-makeup selfies may increase the perceived attainability of the women's attractive appearance (perhaps by wearing certain makeup), which could reduce any negative impact of viewing idealized images of those women. Alternatively, viewing both made up and no-makeup images of the same woman may reduce the extent to which viewers internalize the facial beauty ideal, because they may realize that it does not represent reality, resulting in a less negative impact on their facial concerns. However, further research is needed to test potential mechanisms that may explain why viewing no-makeup images may be better for women's face-related appearance concerns than viewing only made up idealized images.

It is important to note that the no-makeup images used in the present study were natural, close up, and showed the discoloration and blemishes on the women's skin. However, the women's complexion in the images varied from minimal to rather severe blemishes and discoloration. The #nomakeupselfie campaign has been criticized because some women posted images of themselves wearing light makeup or in flattering lighting to hide the visibility of their natural complexion (Time, 2014). The results of the present study may differ if more carefully selected and idealized no-makeup images were used. It is possible that only raw, natural, and close up no-makeup images may have a beneficial effect on women's facial satisfaction and discrepancies compared to only viewing idealized made up images. However, future research could test whether viewing other less natural images also influences women's face-related concerns.

There are several limitations to the present study that should be noted. First, only images of Caucasian women were used in the present study, despite 43% of participants identifying with other ethnicities. Images of Caucasian women were chosen to be consistent with previous research on idealized images (Grabe et al., 2008); however, it is possible that viewing images of women with a different ethnicity to oneself may have a different impact on body image. Therefore, future research should examine whether the same results are evident among ethnically matched targets. Second, the makeup condition contained three more idealized images than the no-makeup condition. Thus, the results of the study could be a result of participants in the makeup only condition being shown a larger number of idealized images than participants in the no-makeup condition. However, given that no difference was found in the frequency and direction of comparisons made to the targets in the no-makeup and makeup only conditions, the cumulative effect of idealized images is unlikely. Nevertheless, future research could replicate the design of the present study with the same number of idealized images shown in both the no-makeup and makeup only conditions. Third, we did not include the number of likes and the number and content of comments that the no-makeup and idealized made up images receive from others on the women's Instagram accounts. It is likely that the impact of viewing no-makeup images on women's body image may be influenced by any endorsement or criticism received by others online. Thus,

future research could investigate the influence of comments and likes from others attached to no-makeup and made up images. Fourth, other techniques may be needed to buffer against the effect of viewing idealized images on women's mood and overall appearance concerns. For example, viewing natural full-body images of women in various positions showing blemishes, stretch marks, cellulite, and body fat along with idealized enhanced full-body images may be protective for women's overall appearance satisfaction. Future research could test the effect of viewing natural images of other aspects of women's bodies on the body image and mood of young women.

The results of the present study may have implications for body image and social media interventions (McLean, Wertheim, Masters, & Paxton, 2017). Previous techniques to protect women from the potential negative impact of idealized images, such as attaching disclaimer labels to those images, have been unsuccessful (Bury, Tiggemann, & Slater, 2017; Bury, Tiggemann, & Slater, 2016; Tiggemann & Brown, 2018; Tiggemann, Slater, Bury, Hawkins, & Firth, 2013). The present research suggests that viewing both natural and idealized images of the same woman may be a valuable area for future prevention research. As done in traditional media literacy programs (Halliwell, Easun, & Harcourt, 2011), intervention programs could educate young women on the idealized, edited, and unrealistic nature of many images found on social media through a combination of verbal instructions and images of women with and without wearing makeup, or images that show the progression from a natural image of a woman to an edited made up image of a woman found on social media. Further, social media influencers, like makeup artists, and women more generally could be encouraged to post more natural no-makeup selfies on their social media profiles to help improve the body image of their followers. Regularly promoting #nomakeupselfies on social media may be one way to reduce any negative impact of viewing idealized images of attractive others online on women's face-related concerns and discrepancies.

The aim of the present study was to investigate the impact of viewing no-makeup selfies on young women's appearance concerns and mood. Viewing idealized images of attractive women wearing makeup reduced young women's facial appearance satisfaction and lead them to want to change more aspects of their face, hair, and skin. Viewing a combination of both no-makeup and idealized made up images of attractive women did not have a significantly worse impact on women's facial appearance satisfaction and face, hair, and skin discrepancies than viewing appearance-neutral control images. No-makeup selfies may show women that the attractive facial appearance of other women on social media is in part due to the use of makeup and thus does not reflect the woman's actual appearance and is attainable (by wearing makeup). However, further research is needed to test the impact of no-makeup selfies on women's body image and to examine mechanisms (other than appearance comparisons) that may be responsible for any effect. Posting and viewing natural no-makeup images may be one way to reduce any negative impact of social media use on women's body image.

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