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An evaluation of the *Aerie Real* campaign: Potential for promoting positive body image?

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Abstract

This study evaluated the impact on young women's body satisfaction of an advertising campaign: *Aerie Real*, which included images of models who were not digitally modified. In total, 200 female students were randomly allocated to view either *Aerie Real* images or digitally modified images from previous campaigns. In the total sample, no condition differences appeared. However, participants with high appearance comparison reported a smaller decrease in body satisfaction after viewing the *Aerie Real* images as compared to those viewing previous images ($p = .003$). Findings provide preliminary support for the *Aerie Real* campaign as less deleterious form of media for body image.

Keywords

advertising, body image, health promotion, media, models

Exposure to thin-ideal media images has been robustly associated with increased body image concerns among young women (Harper and Tiggemann, 2008; Levine and Murnen, 2009; Stice et al., 2001), as well as the use of extremely unhealthy weight control methods, including restrictive eating, purging, and laxative abuse (Anschutz et al., 2008; Hawkins et al., 2004) and is considered to be one of the important structural factors contributing to high rates of these concerns among adolescents and young women in the general population (Levine and Murnen, 2009). These rates are concerning from a public health standpoint as body image concerns have been shown to predict increased smoking, dieting, overweight, depressive symptoms, disordered eating, and eating disorders (Holsen et al., 2001; Neumark-Sztainer et al., 2006; Paxton et al., 2006; Stice and Shaw, 2002).

Given the documented detrimental effects of thin-ideal images on the body image of female adolescents and young women, a number of organizations and governments have shown an interest in exploring policy and legislative efforts aiming to modify the media environment such that it is less saturated by thin-ideal imagery (Samuel, 2015). In parallel, some companies have been making changes to their marketing strategies and campaigns with the aim of promoting positive body image (Johnston and Taylor, 2008). In this way, in January 2014, *Aerie*, a large US lingerie clothing company

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targeting adolescent girls, ceased digitally retouching their advertising and launched the campaign *Aerie Real* using unmodified images identified as such through the label *Aerie Real*. Such corporate efforts are important as they pave the way for similar changes from other brands and may play a role in creating cultural and structural change. However, evaluating the impact of these efforts is also critical with a view to informing policy and legislative efforts. The aim of this study was, therefore, to evaluate the differential impact on body image of the new *Aerie Real* campaign as compared to previous Aerie advertising campaigns.

To our knowledge, this is the first study aiming to evaluate the success of a corporate-designed marketing campaign aiming to promote positive body image. A small body of previous research, however, has aimed to examine two of the active ingredients of the *Aerie Real* campaign: (1) the effects of exposure to images that are not digitally modified—one of the practices that largely contributes to the omnipresence of thin-ideal imagery and (2) labeling media images as not digitally altered (Harrison and Hefner, 2014; Tiggemann et al., 2014). Given that one of the consequences of the digital modification of images is the depiction of unrealistic body shapes and proportions, as well as the possibility of removing undesirable aspects of extreme slenderness such as visible or protruding bone structure, it has been suggested that reducing digital retouching could be helpful in that it would contribute to making depictions somewhat more realistic. Similarly, labeling images as digitally modified is thought to alert individuals to the fact that the images are not realistic and depict unattainable body shapes, thus limiting appearance comparisons with the images, one of the mechanisms posited to contribute to the effects of media exposure on body image models (Groesz et al., 2002; Levine and Murnen, 2009).

In an experimental study, Harrison and Hefner (2014) allocated high-school students to one of four different conditions. In three conditions, participants viewed 10 images of same-gender volunteer college students that had (1) not been digitally modified, (2) been digitally modified, or (3) been digitally modified and were presented as "retouched," and participants were then asked to rate their attractiveness. A fourth control group viewed no images. No group differences were found in post-exposure objectified body consciousness or self-rated attractiveness, thus providing little support for the usefulness of unmodified images in promoting positive body image. In addition, the authors investigated whether levels of thin-ideal internalization, that is, endorsement of the thin-ideal as a personal standard, would moderate experimental effects. However, no moderating effects were found. The use of volunteer undergraduates, rather than professional models, might have resulted in the participants engaging in fewer upward appearance comparisons as compared to when viewing typical media images, which might have limited the experimental effects. Thus, more research is warranted on the usefulness of using unmodified images in media, particularly using more ecologically valid stimuli.

Regarding labeling, Tiggemann et al. (2014) evaluated the effects of exposure to media images labeled as not digitally altered, as compared to the same images that were not labeled among a sample of undergraduate females. Findings revealed no group difference in body dissatisfaction when comparing young women allocated to either viewing condition, suggesting that the label in itself did not alter the effects of exposure to the images. Of note, however, the images used in this study were drawn from women's fashion magazines and advertisements, and therefore likely all digitally altered, if only minimally, given the widespread use of these techniques. Thus, more research is also warranted on the effects of these labels on images that are genuinely unmodified.

As mentioned above, sociocultural theories of body image concerns posit that the detrimental effects of thin-ideal image on body dissatisfaction occur in large part through the mechanism of social appearance comparison, that is, the process of engaging in generally upward (i.e. unfavorable) comparisons between one's own appearance and that of media models

(Groesz et al., 2002; Levine and Murnen, 2009). Consistent with this theory, appearance comparison has been found to moderate the effects of exposure to thin-ideal imagery on body image concerns, such that adolescent girls and young women reporting high levels of appearance comparison are most vulnerable to the effects of media exposure (e.g. Durkin and Paxton, 2002; Want, 2009).

This study, therefore, aimed to examine the differential effects on body image of exposure to images from the *Aerie Real* campaign compared to images from a previous, digitally retouched *Aerie* campaign. Given that today's young women are more frequently exposed to media on screen as opposed to print (Roberts and Foehr, 2008), our study sought to present these images on screen so as to further increase the ecological validity. While the majority of the literature investigating the effects of media exposure has focused on print media, some research has shown that exposure to idealized images on television shows (Hargreaves and Tiggemann, 2003), music videos (Prichard and Tiggemann, 2012), or the Internet (Bair et al., 2012) results in similar detrimental effects on body image. The primary hypothesis (hypothesis 1) was that participants allocated to view the *Aerie Retouched* images drawn from previous advertising campaigns in which digital retouching was used would report greater pre- to post-exposure decreases in body satisfaction and mood as compared to participants who viewed the *Aerie Real* images. Furthermore, it was hypothesized (hypothesis 2) that engaging in appearance comparison with the experimental stimuli would moderate the effect, such that the differential impact of condition on body satisfaction and mood would be greatest among participants who engaged in higher levels of appearance comparison with the images presented.

Methods

Participants

Participants were female undergraduate students, aged 18 years or older ($N = 200$). Over

half of the sample (59%) was in the first or second year of college ($n = 118$). The mean age was 19.57 (standard deviation (SD) = 1.36). In total, 63 percent of the sample identified as Caucasian, 18.5 percent identified as Asian, 4.5 percent identified as African American or Hispanic, 7.5 percent reported identifying with multiple ethnicities, and 1.5 percent identified as other.

Procedures

This study utilized an experimental manipulation presented under the cover story of market research and was administered on a laptop computer in an empty office in the Department of Applied Psychology to help maintain the cover story. After providing informed consent, participants were randomly assigned to one of two conditions: *Aerie Retouched* or *Aerie Real*. Both groups completed a demographic questionnaire and the Visual Analogue Scale (VAS) assessing body image and mood. In both conditions, participants viewed the same neutral video (Tom and Jerry cartoon), that lasted in total 7 minutes, with experimental images inserted at three points: the beginning of the clip, about a third of the way through, and two-thirds of the way through. On each of these three occasions, participants viewed the same images: including three *Aerie* images (different in both conditions) and two neutral advertisements (identical in each condition). Each static image appeared on the screen for 10 seconds at each presentation, thus 30 seconds in total. This mode of presentation of the images was designed to imitate a "commercial break." The neutral advertisements included a nail varnish and a watch advertisement with no models or anthropomorphic features.

The three stimuli images presented in the two conditions were drawn from either *Aerie* campaigns pre-January 2014 or the *Aerie Real* campaign from early 2014. All six advertisements featured a single female model portrayed from her head down to approximately the middle of her thighs. All models wore a bra and panties, although one of the models in the *Aerie Real* advertisements had her arms through a sweater

that was open to reveal the underwear. All three of the models in the *Aerie Retouched* advertisements were Caucasian and blonde (as was predominantly the case in the previous Aerie campaigns). In the *Aerie Real* images, one model was Caucasian with light brown hair, one was African American, and the third was olive skinned with dark brown hair. In addition, the models in these images had less perfectly symmetrical features and slightly larger body sizes compared to the models in the *Aerie Retouched* images. All six images contained text regarding the pricing of the underwear or the features of the product (e.g. the text "40% off in stores and Aerie.com" was featured on two of the *Aerie Retouched* and one of the *Aerie Real* images). In addition, all three of the *Aerie Real* images were accompanied by a footer explaining that the model had not been digitally modified (e.g. "The girl in this photo has *not* been retouched. #*AerieReal*").

Posttest measures included the VAS for body image and mood, the state body image and appearance comparison measure, the trait appearance comparison measure, the attention check, the behavioral measure, and the awareness of digital modification status. A US$15 gift card was provided to compensate participants for their time. They were also provided the opportunity to enter into a raffle for a tank-top of their choosing (revealing or loose fit). This study was approved by the Northeastern University Institutional Review Board.

Measures

Demographic questionnaires. Participants completed a demographic questionnaire, on which they reported their age, year in university, height, weight, and race/ethnicity. Body mass index (BMI; height (m^2)/weight (kg)) was calculated from the self-reported height and weight data. The pretest questionnaire also included an advertising consumption habit questionnaire developed by the researchers to lend credence to the marketing survey cover.

Body image. VASs were used to measure state body satisfaction (Heinberg et al., 1995). Participants answered two scales on body

satisfaction (e.g. "How satisfied with your appearance do you feel right now?" and "How satisfied with your weight do you feel right now?") with 10 cm lines anchored from "none" to "a lot." These scales are widely used in the literature for assessing change in body image–related attitudes and feelings following media exposure (Ata et al., 2013; Tiggemann et al., 2013). Participants completed them before and after the manipulation to assess changes in state body satisfaction. Internal reliability was satisfactory with $\alpha = .64$ at Time 1 and $\alpha = .80$ at Time 2, as the number of items has been shown to effect alpha values with scales with a small number of items tending to result in lower values (Tavakol and Dennick, 2011).

The Body Image State Scale (BISS) was also included to measure post-exposure state body satisfaction (Cash et al., 2002). The scale includes four questions assessing current satisfaction with one's "physical appearance," "body size and shape," "weight," and "physical attractiveness." The last two questions ask participants to rate how they feel about their "looks" as compared to how they "usually feel" and how they compare their looks to the "average person." Participants indicated their level of satisfaction on a 9-point scale ranging from "Extremely dissatisfied" to "Extremely satisfied." The BISS has shown high test-retest reliability ($r = .69$ for women), internal consistency ($\alpha = .77$ for women), and construct validity (Cash et al., 2002). In the present sample, $\alpha = .85$.

As a brief behavioral measure, participants were instructed to choose one of two tank-tops based on which one they would be "most likely to wear right now." They were then given the opportunity to enter into a lottery for the chance to win a tank-top from *Aerie*. One tank-top option was revealing, while the other was looser fitting. Thus, it was expected that lower body satisfaction would be evidenced by choosing the less revealing top.

Mood. VASs were used to measure state mood (Heinberg et al., 1995). Five scales were included on which participants indicated their current anxiety, depression, happiness, anger, and confidence with 10 cm lines anchored from

"none" to "a lot." These scales are widely used in the literature for assessing change in feelings following media exposure (Ata et al., 2013; Tiggemann et al., 2013). They were included before and after the manipulation to assess changes in state mood. The "happiness" and "confidence" items were reverse-scored, and then all the items were combined to create one negative mood score, with higher scores indicating a more negative mood. Internal reliability was somewhat low with $\alpha = .60$ at Time 1 and $\alpha = .64$ at Time 2.

State appearance comparison. Participants completed the State Appearance Comparison Scale (SACS; Tiggemann and McGill, 2004), which includes three items that assess the appearance comparison processes engaged in during exposure to the study stimuli and has previously been used in media-exposure designs (Tiggemann et al., 2013). Participants rated their agreement with each item on a 7-point Likert scale from $1 = $ "No thought about my appearance" to $7 = $ "A lot of thought" (e.g. "To what extent did you think about your appearance while viewing the magazine advertisements?"). In the present sample, this scale demonstrated high internal reliability ($\alpha = .91$). Total SACS scores ranged from 1 to 7 with the median score being 4.00. The variable was dichotomized to create a high SACS and a low SACS group with individuals scoring above 4.00 included in the high SACS group.

Consumer intentions. After viewing the advertisements, participants completed the Consumer Response Questionnaire (CRS; Tiggemann and McGill, 2004), which asked them to rate their consumer intentions for each item on a 5-point Likert scale from $1 = $ "Strongly Disagree" to $5 = $ "Strongly Agree." This scale includes questions assessing participant interest and opinions about certain features of the ad such as the layout, creativity, and effectiveness. This was included in an attempt to maintain the study's cover story that this was a marketing research study. In addition, the researchers also developed four items assessing participants' likelihood to buy the featured product, to buy other products from the featured brand, to look for other products from the same brand, and to recommend the brand to a friend. The sum of the scores to these items for the *Aerie* images in both conditions (but not the neutral images) was used to assess consumer intentions. In the present sample, α ranged from .90 to .94.

Attention check. As an assessment of the participant's attentiveness, four open-ended questions regarding the content of the cartoon they watched (in which the ads were embedded) were included. The questions addressed main characters, themes, and conflicts from the cartoon, as well as one question about the content of the advertisements. Researchers focused on the fourth question regarding the advertisements in assessing participant attention. Participants were regarded as attending if they answered "Aerie," "American Eagle," "underwear," "bras," or "lingerie" when asked about the content of the advertisements. Only three participants were judged to not be attending to the advertisements, or 1.5 percent of the total sample.

Awareness of digital modification status. Finally, participants completed a single follow-up question that asked whether or not they believed that the advertisements that they saw were digitally retouched. Participants could answer that the advertisements were "photoshopped," "not photoshopped," and "some photoshopped, some not," or that they "couldn't tell," "didn't wonder," or "didn't remember."

Data analyses

The three participants who were judged to not have been paying attention were excluded from the analyses. Both the VAS measures and the BISS displayed satisfactory normality. Thus, to explore hypothesis 1, a 2 (time) × 2 (condition) repeated measures analysis of variance (ANOVA) was conducted with pretest and posttest scores on the VAS measures of body satisfaction and negative affect, with time as the repeated factor and condition as the between-subjects factor. An independent-samples *t*-test was used to compare scores from the BISS, which was administered

only at posttest. In addition, an independent-samples Mann–Whitney U test was conducted to explore differences in choice of tank-top. To test hypothesis 2 and examine the moderating role of appearance comparison, as previously done (Harrison and Hefner, 2014), we employed a median split on the SACS scores, thus dividing the sample into a high appearance comparison group and a low appearance comparison group. We then conducted a 2 (time) × 2 (condition) × 2 (high/low appearance comparison) repeated measures ANOVA including the main effect of time, the two-way time × condition interaction, and the three-way time × condition × appearance comparison interaction for both body satisfaction and negative affect. In addition, a 2 (condition) × 2 (high/low appearance comparison) ANOVA was conducted with BISS scores as the dependent variable, including the main effect of condition, and the two-way time × appearance comparison interaction. These analyses were also conducted using BMI as a continuous covariate. Ethnic minority status was not included as a covariate, as no group differences in dependent variables were found. Finally, the Mann–Whitney U test was conducted in each of the appearance comparison groups separately to explore the moderating effect on choice of tank-top.

Results

The mean BMI, calculated from self-report weight and height, was 22.75 ($SD = 3.48$). An independent-samples t-test revealed no significant differences between the *Aerie Retouched* condition and the *Aerie Real* condition in age, ethnicity, or BMI. Table 1 shows the dependent variable mean values and SDs by condition and assessment time point.

Body image

VAS. When testing hypothesis 1, the time × condition ANOVA revealed no effect for the interaction between time and condition, $F(1, 195) = 1.99$, $p = .16$, $\eta_p^2 = .01$, but did reveal a main effect for time, $F(1, 195) = 24.43$, $p < .001$, $\eta_p^2 = .11$, such that in the total sample

body satisfaction decreased post-exposure. When testing hypothesis 2, examining appearance comparison as a moderator (see Table 2 for mean values and SD per condition and time point), the time × condition × low/high appearance comparison ANOVA revealed a significant three-way interaction, $F(2, 192) = 6.12$, $p = .003$, $\eta_p^2 = .06$. As previously, the interaction between time and condition was non-significant, but a main effect of time was present, $F(1, 195) = 21.35$, $p < .001$, $\eta_p^2 = .10$. Examination of the three-way interaction and post hoc paired t-tests revealed that pre–post changes in body satisfaction were non-significant among participants with low levels of appearance comparison in both the *Aerie Real*, $t(41) = .33$, $p = .74$, and the *Aerie Retouched* conditions, $t(45) = 1.3$, $p = .20$. Furthermore, among the high appearance comparison group, participants in the *Aerie Retouched* condition presented a greater decrease in body satisfaction, $t(52) = 4.8$, $p < .001$, as compared to participants in the *Aerie Real* condition, $t(54) = 2.6$, $p = .01$.

Additional analyses were conducted including BMI as a covariate, and a similar pattern emerged. The time × condition ANOVA testing hypothesis 1 revealed no effect for the interaction between time and condition, $F(1, 194) = 1.20$ $p = .15$, $\eta_p^2 = .01$. When testing hypothesis 2, examining appearance comparison as a moderator, the time × condition × low/high appearance comparison ANOVA revealed a significant three-way interaction, $F(3, 191) = 4.93$, $p = .003$, $\eta_p^2 = .07$, such that among the high appearance comparison group, participants in the *Aerie Retouched* condition presented a greater decrease in body satisfaction as compared to participants in the *Aerie Real* condition.

BISS. When testing hypothesis 1, findings from the independent-samples t-test revealed no condition group differences in state body satisfaction (administered only at posttest), $t(194) = -.63$, $p = .53$. When testing hypothesis 2, no main effect of condition emerged, $F(1, 191) = .27$, $p = .61$, $\eta_p^2 = .01$. The condition × appearance comparison ANOVA interaction effect was significant, $F(2, 191) = 6.61$, $p = .002$, $\eta_p^2 = .07$.

Table 1. Mean values and standard deviations for dependent measures.

Measure	Baseline		Posttest	
	M	SD	M	SD
Body satisfaction				
VAS *Aerie Retouched* (mm)	47.56	19.20	43.08	22.25
VAS *Aerie Real* (mm)	43.46	21.75	40.91	23.08
Body dissatisfaction				
BISS *Aerie Retouched*	n/a	n/a	31.56	8.10
BISS *Aerie Real*	n/a	n/a	30.94	8.91
Appearance comparison				
SACS *Aerie Retouched*	n/a	n/a	4.20	1.55
SACS *Aerie Real*	n/a	n/a	4.32	1.49
Negative affect				
VAS *Aerie Retouched* (mm)	23.46	10.35	25.37	10.90
VAS *Aerie Real* (mm)	25.06	10.75	27.89	11.30

M: mean; SD: standard deviation; VAS: Visual Analogue Scale; BISS: Body Image States Scale; SACS: Social Appearance Comparison Scale.
Aerie Retouched n = 101; *Aerie Real* n = 99.

Table 2. Mean values and standard deviations for dependent measures by appearance comparison median split.

Measure	N	Baseline		Posttest	
		M (mm)	SD	M (mm)	SD
Low appearance comparison group	88				
Body satisfaction					
VAS *Aerie Retouched*	42	43.61	20.01	42.80	20.37
VAS *Aerie Real*	46	49.40	20.61	40.08	21.22
Negative affect					
VAS *Aerie Retouched*	42	25.32	11.84	27.67	11.57
VAS *Aerie Real*	46	24.39	10.90	25.14	10.46
High appearance comparison group	108				
Body satisfaction					
VAS *Aerie Retouched*	55	42.75*	22.30	38.91*	24.22
VAS *Aerie Real*	53	46.21*	18.22	38.83*	22.76
Negative affect					
VAS *Aerie Retouched*	55	25.18	9.87	28.25	10.98
VAS *Aerie Real*	53	22.85	10.06	25.71	11.49

M: mean; SD: standard deviation; VAS: Visual Analogue Scale.
*p < .05.

However, follow-up post hoc tests revealed no significant condition differences in either the high-comparison, $t(103) = .62$, $p = .95$, or the low-comparison group, $t(85) = -.80$, $p = .43$, suggesting this interaction was driven by differences between the high- and low-comparison groups regardless of condition.

When controlling for BMI, similar findings emerged. The univariate test examining hypothesis 1 revealed no condition group differences in

state body satisfaction, $F(1, 192) = .001$, $p = 097$, and when testing hypothesis 2, the condition × appearance comparison ANOVA revealed that the interaction effect was significant, $F(2, 191) = 7.65$, $p = .001$, $\eta_p^2 = .08$. However, follow-up post hoc univariate tests revealed no significant condition differences in either the high-comparison, $F(1, 104) = .31$, $p = .58$, or the low-comparison group, $F(1, 86) = .30$, $p = .58$, again suggesting this interaction was mainly driven by the effect of appearance comparison.

Tank-top. An independent-samples Mann–Whitney U test, testing hypothesis 1, showed no significant difference between conditions in terms of participants' choice of tank-top, Mann–Whitney $U = 5171.00$, $p = .38$. When using appearance comparison as a moderator, significant differences failed to emerge in either the high- ($p = .92$) or the low-comparison group ($p = .28$). Exploratory analyses revealed, however, that higher BMI was significantly associated with choosing the longer tank-top (chosen to represent the less revealing option), $\rho = -.18$, $p = .01$.

Negative affect (VAS)

Findings from the time × condition ANOVA with the negative affect VAS revealed no time × condition interaction, $F(1, 195) = 1.01$, $p = .32$, $\eta_p^2 = .00$. However, a main effect for time emerged, $F(1, 195) = 26.82$, $p < .001$, $\eta_p^2 = .12$, such that negative affect overall increased post-exposure. When testing hypothesis 2, examining appearance comparison as a moderator, the time × condition × low/high appearance comparison ANOVA revealed no significant three-way interaction, $F(2, 192) = 1.33$, $p = .27$, $\eta_p^2 = .01$. As previously, the interaction between time and condition was non-significant, but a main effect of time was present, $F(1, 192) = 24.30$, $p < .001$, $\eta_p^2 = .11$.

When controlling for BMI, similar findings emerged, with no significant interaction effect emerging in the time × condition ANOVA, $F(1, 195) = .71$, $p = .40$, $\eta_p^2 = .00$. In addition, when testing hypothesis 2, examining appearance

comparison as a moderator and controlling for BMI, the time × condition × low/high appearance comparison ANOVA revealed no significant three-way interaction, $F(3, 192) = 1.04$, $p = .39$, $\eta_p^2 = .01$.

Consumer intentions

Participants in the *Aerie Real* condition reported greater consumer intentions. Thus, intentions to purchase the items portrayed or other items from the same brand were descriptively higher among participants in the *Aerie Real* condition (mean (SD) ranging from 14.8 (4.6) to 15.1 (4.3) across the three images), as compared to the participants in the *Aerie Retouched* condition (mean (SD) ranging from 13.4 (5.4) to 14.8 (4.6) across the three images). However, a 3 (*Aerie* image) × 2 (condition) repeated measures ANOVA revealed that this difference was not significant when correcting for sphericity, $F(2, 376) = 1.4$, $p = .24$.

Awareness of digital modification status

In the *Aerie Retouched* condition, 42 percent ($n = 41$) of participants had correctly identified that the images had been digitally modified, 13 percent ($n = 13$) thought that they had not been modified, 17 percent ($n = 17$) thought that some had been modified but others had not, and 25 percent ($n = 25$) reported that they either could not tell, could not remember, or had not thought about it. In the *Aerie Real* condition, 30 percent ($n = 30$) of participants had correctly identified the images they had seen as unmodified, 6 percent ($n = 6$) thought that they had been digitally modified, 13 percent ($n = 13$) thought that some had been modified while others has not, and 49 percent ($n = 49$) could not tell, could not remember, or had not thought about it. To examine the effects of awareness of digital modification on our findings, a three-way time × condition × awareness digital modification repeated measures ANOVA was conducted among the high appearance comparison group with the body image VAS as the dependent

variable. The interaction term with awareness of digital modification was non-significant, suggesting whether participants identified the image they were viewing as having been digitally modified or not did not seem to have impacted the findings.

Discussion

This study aimed to evaluate the differential impact on body image of images from the new *Aerie Real* campaign, a corporate-initiated advertising campaign aiming to promote positive body image, as compared to images from the previous *Aerie* advertising campaigns. While findings were not robust across all body image measures, they provide partial support for the capacity for this campaign to indeed be less detrimental to body satisfaction as compared to previous campaigns. Furthermore, we found no evidence of the *Aerie Real* campaign being more harmful than the previous ones, which is also an important consideration. These findings are critical from a public health perspective and provide preliminary data to help inform legislative efforts.

Findings revealed that all participants experienced a decrease in body satisfaction as measured through the VAS after exposure to the media images, regardless of condition. In addition, participants overall experienced an increase in negative affect after viewing either set of advertisements. Thus, these findings replicate previous work documenting the deleterious effects of thin-ideal exposure on body satisfaction and mood (Ata et al., 2013; Harper and Tiggemann, 2008; Hawkins et al., 2004; Prichard and Tiggemann, 2012). One possible reason for these effects is that even the unmodified images portrayed relatively thin young women, who did not deviate greatly from the thin-ideal (Grabe et al., 2008). In addition, advertising effectiveness to some degree relies on the creation of a lack or a need in the consumer, thus viewing any form of advertising might be associated with an increase in negative affect. Further research aiming to identify the types of images associated with the smallest

decreases in body satisfaction and mood after exposure is warranted.

Critically, among participants who reported engaging in high levels of appearance comparison, viewing *Aerie Real* images was less detrimental to body satisfaction compared to viewing the advertisements from previous *Aerie* campaigns. Among participants with lower levels of appearance comparison, however, no differences emerged. Furthermore, the contrast between the findings from the pre–post VAS scores and those from the post-BISS scores highlighted the importance of considering differences in the drop in body satisfaction from pre- to post-exposure between groups, above and beyond differences at posttest. This finding is consistent with previous reports that appearance comparison moderates the relationship between media exposure and body satisfaction, with young women with high levels of appearance comparison seeming to be more vulnerable to the detrimental effects of media exposure (Cattarin et al., 2000; Leahey et al., 2011; Lin and Kulik, 2002). More importantly, however, this finding indicates that to some extent, the new *Aerie Real* campaign might be successful in creating advertisements that are less detrimental to body satisfaction among young women. This is a highly promising finding and suggests that should findings be replicated, such initiatives should be encouraged with the aim of creating a media environment less deleterious to young women's body image.

Given that the *Aerie Real* campaign involved a number of changes relative to the previous advertising campaigns, including greater diversity in terms of body shape and size, and also ethnic diversity, in addition to the lack of digital modification, and the presence of the *Aerie Real* label, it is difficult to know exactly to what to attribute its partial success. Conducting rigorous experimental studies that systematically vary these factors might be helpful to understand which factors exert the greatest protective role in terms of body satisfaction. In addition, however, from a broader social change perspective, another important direction would be to replicate and confirm these findings so as to

increase the evidence base available to inform stakeholders in business and public policy regarding the most socially responsible advertising practices.

Our findings revealed no significant differences in terms of consumer intentions between young women who had viewed the unmodified or the retouched images, although descriptively, consumer attitudes were more positive among those viewing the *Aerie Real* images. Previous research has suggested that women react positively to advertising images that portray models who deviate from the thin-ideal (Diedrichs and Lee, 2011; Paraskeva et al., 2017). It may be that our lack of replication is partly due to the fact that *Aerie* is a well-known brand among this population, and that the purchasing behaviors of these young women are likely based on their past knowledge of this brand and their products, above and beyond the latest advertisement campaign. Furthermore, the participants allocated to view the *Aerie Retouched* images may have been aware of the new *Aerie Real* campaign, which might have increased their buying intentions if they identified the brand from the images. Most importantly though, this finding provides additional support for the fact that using images that deviate from the thin-ideal will not *negatively* impact consumer intentions, which may support this type of advertising campaign.

This study includes several limitations. First, although efforts were made to diversify the means of assessing body image, support for the hypotheses was only found from one of the measures. Second, this study was conducted with undergraduate students, and results may not generalize to the wider population of women and girls. Third, as mentioned above, the study was designed and intended as an evaluation of a large advertising campaign that had the potential for significant reach, and therefore affect public health. While this increased the ecological validity and impact of the findings, it also entailed that images were not matched on all characteristics and unavoidably decreased the capacity to parse out the effects of the different aspects of advertising campaigns, and in particular the

labels. It is worth noting though that only 30 percent of the participants in this study reported correctly identifying the *Aerie Real* images as being unmodified, suggesting that the large majority of participants may not have noticed the label. Given the evidence for the "boomerang" effect of warning labels on digitally modified images, that is, their potential for increasing the detrimental effects of media exposure (Harrison and Hefner, 2014; Tiggemann et al., 2013, 2014), future research should be conducted to examine the effects of a positive label indicating the absence of digital modification.

From a public policy perspective, the principal implication of these findings is that corporate-initiated advertising campaigns aiming to promote positive body image may have some capacity to effectively contribute to changes in the media environment and in social norms. Thus, these findings further highlight how industry should be considered as an important stakeholder in universal prevention efforts. Should these findings be replicated, they would provide support for more restrictive legislation aiming to diversify media imagery, for example, through limiting the use of digital modification. In addition, such findings would provide further incentive for other companies to follow suit and cease to modify the images used in their promotional materials.

In sum, this study makes an important contribution to the extant literature by providing the first empirical evaluation of the *Aerie Real* advertising campaign designed to promote positive body image. Our findings suggest that such campaigns might contribute to decreasing the detrimental effects of exposure to the ubiquitous thin-ideal by starting to diversify the imagery presented in such campaigns. The replication and extension of these findings have important implications for public health and legislative efforts, with a view to universal prevention.

Declaration of Conflicting Interests

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