Disclaimer labels on fashion magazine advertisements: Does timing of digital alteration information matter?

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Abstract

The study aimed to investigate whether a message informing readers about digital alteration read before exposure to thin ideal advertisements would enhance the effectiveness of disclaimer labels. Participants were 280 female undergraduate students who viewed eleven thin ideal fashion magazine advertisements. Half viewed the advertisements in their original format, and half viewed the same advertisements with a digital alteration disclaimer label. Prior to viewing the advertisements, participants read either a brief message informing them that advertisements are commonly digitally altered, or a control message. Irrespective of experimental condition, exposure to the thin ideal advertisements led to increased body dissatisfaction, with social comparison predicting this increase. Neither the disclaimer label nor the pre-exposure message, nor their combination, led to reductions in perceived realism, social comparison, or body dissatisfaction. However, trait appearance comparison moderated the effect of pre-exposure message on perceived realism, such that women high on trait appearance comparison in the digital alteration pre-exposure message condition rated the models as relatively more realistic than did women low on this trait. It was concluded that more research is needed to identify brief and easy-to-implement universal prevention strategies that can reduce the negative effects of thin ideal media imagery on women's body image.

Keywords: disclaimer label, digital alteration, fashion magazine advertisements, media, thin ideal, body image.

1. Introduction

Widespread body dissatisfaction among women in western societies has been well documented, with sociocultural factors generally considered to play a major role (Dittmar, 2009; Engeln-Maddox, 2005; Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999; Tiggemann, 2011). Indeed, meta-analyses have identified idealised images in the media as having a pervasive negative influence on women's body image (Grabe, Ward, & Hyde, 2008; Groesz, Levine, & Murnen, 2002; Levine & Murnen, 2009; Want, 2009). This has generally been attributed to upward social comparison, whereby women compare their appearance with that of the idealised models and find themselves wanting (Thompson et al., 1999; Want, 2009). Recently, these ideals have been rendered even more unrealistic due to the common practice of digital altering and enhancing media images (Harper & Tiggemann, 2008; Krawitz, 2014). As body dissatisfaction has been identified as a major risk factor for eating disorders (Posavac, Posavac, & Weigel, 2001; Stice, 2002; Stice, Schupak-Neuberg, Shaw, & Stein, 1994), the negative effects of thin ideal media exposure have become an important societal concern.

Internationally, policy makers and governments have been searching for quick and easy-to-implement universal prevention strategies in an attempt to prevent women from feeling dissatisfied with their bodies following idealised media exposure (Krawitz, 2014; Paraskeva, Lewis-Smith, & Diedrichs, 2015; Paxton, 2015). A number of countries, including Israel, France, and Australia, have introduced population level preventative recommendations or legislation that suggest or require a disclaimer label be attached to any digitally altered media image (Charlton, 2015; Geuss, 2012; Krawitz, 2014; Paxton, 2015). The rationale underlying this social policy is that a disclaimer label will highlight the appearance of a model as unrealistic and therefore inappropriate as a comparison target, thereby reducing

social comparison and resultant body dissatisfaction (Paraskeva et al., 2015; Tiggemann, Slater, Bury, Hawkins, & Firth, 2013).

There is good reason to expect that disclaimer labels would potentially ameliorate negative effects on body dissatisfaction, as media literacy programs which encourage participants to critically analyse media images and messages have shown some success (Levine & Murnen, 2009; Posavac et al., 2001; Yamamiya, Cash, Melnyk, Posavac, & Posavac, 2005). However, investigations of the effectiveness of disclaimer labels have been less successful. One study has found that disclaimer labels attached to women's magazine fashion shoots led to reduced body dissatisfaction (Slater, Tiggemann, Firth, & Hawkins, 2012), but other studies that have investigated disclaimer labels on fashion magazine advertisements have found no such benefit (Ata, Thompson, & Small, 2013; Bury, Tiggemann, & Slater, 2015; Tiggemann et al., 2013).

One potential reason as to why disclaimer labels may not have been effective in reducing body dissatisfaction in the latter studies is that they may not have reduced social comparison, as reported by Bury et al. (2015) and Tiggemann et al. (2013). This negative finding is consistent with recent conceptualisations of social comparison that such comparisons can occur automatically, even when they are inappropriate (Bessenoff, 2006; Gilbert, Giesler, & Morris, 1995; Paraskeva et al., 2015; Want, 2009). Thus, it may be that the digital alteration message contained in a disclaimer label comes too late, after women have already spontaneously made their upward comparisons with the models. Hence providing women with information about digital alteration *before* exposure to thin ideal advertisements may better allow them to inhibit appearance comparison processing or cognitively prepare to 'mentally undo' inappropriate comparisons (Gilbert et al., 1995), and thereby preserve body satisfaction.

Thus the major aim of the current study was to investigate whether a brief digital alteration informational message presented before viewing fashion magazine advertisements would increase the effectiveness of disclaimer labels in reducing body dissatisfaction. It was expected that such a message would prime women to prepare themselves to avoid making inappropriate comparisons (Gilbert et al., 1995; Want, 2009). Specifically, it was predicted that prior information would interact with the disclaimer label, such that with the provision of prior information, disclaimer labels would reduce perceived realism, social appearance comparison, and body dissatisfaction. State appearance comparison was expected to mediate change in body dissatisfaction. Trait appearance comparison was also assessed as a possible moderator of effects. Women who have a higher tendency to compare on the basis of appearance may be more cognitively primed to attend to any information related to appearance (Yamamiya et al., 2005) and, as a result, may not be able to prevent themselves from making (inappropriate) comparisons. Accordingly, they would be expected to benefit less from any intervention.

2. Method

2.1 Design

A 2 x 2 between subjects experimental design was employed to investigate the effect of pre-exposure informational message (control, digital alteration) and disclaimer label (no label, label) appended to thin ideal fashion magazine advertisements. Major dependent variables were body dissatisfaction, state appearance comparison, and perceived realism. Trait tendency for appearance comparison was examined as a potential moderating variable.

2.2 Participants

Participants were 280 female undergraduate students at a South Australian university aged between 18 and 30 years, with a mean age of 20.42 (*SD* = 2.99). The average body mass index of 22.69 (*SD* = 5.26) was within the normal weight range (World Health Organisation,

2011). The majority of participants identified as White (76.8%), with 18.6% Asian and 4.6% 'other'.

2.3 Materials

2.3.1 Pre-exposure message

A short printed informational message (control, digital alteration) was presented to participants on the cover of a folder. The digital alteration information message read: "As you may be aware, nearly all images in fashion magazine advertisements (like those you are about to view) are airbrushed or digitally altered to improve the appearance of the models in the advertisements". The control message was designed to be of the same structure and length, and read: "As you may be aware, there are many different types of magazines available such as fashion, gardening, celebrity news and gossip, home styling, craft and hobbies, parenting, lifestyle, television, pets and business".

2.3.2 Thin ideal stimuli

The stimuli consisted of eleven thin ideal advertisements (plus four product advertisements) sourced from popular women's fashion magazines, including *Cleo*, *Marie Claire*, and *Vogue*. The fifteen advertisements were chosen from an initial pool of 50 advertisements (30 thin ideal, 20 product) to represent a typical fashion magazine collection. Each advertisement contained one female model representative of the thin ideal, with at least three quarters of the model's body visible.

The advertisements were printed on high quality A4-size photographic paper. There were two different versions of each advertisement: the original advertisement, and that advertisement with a disclaimer label ("Warning: This image has been digitally altered"). Labels were in size 12 Calibri font enclosed within a thin border. Research has demonstrated that participants do notice such disclaimer labels when affixed to fashion advertisements (Ata et al., 2013; Bury, Tiggemann, & Slater, 2014; Bury et al., 2015).

2.3.3 Body dissatisfaction

Following Heinberg and Thompson (1995), seven visual analogue scales (VAS) were used to obtain measures of mood (five items) and state body dissatisfaction (weight dissatisfaction, appearance dissatisfaction) both before and immediately after viewing the 15 magazine advertisements. The mood items (not analysed here) were included to mask the focus on body dissatisfaction. Each scale consisted of a 100mm continuous horizontal line with endpoints labelled "none" and "very much". A score for body dissatisfaction was calculated by averaging the VAS measures of 'weight dissatisfaction' and 'appearance dissatisfaction'. Scores ranged from a possible 0 to 100, with a higher score indicating greater body dissatisfaction. Heinberg and Thompson (1995) reported good construct validity for the body dissatisfaction VAS. In the current study, internal consistency was acceptable (pre-exposure $\alpha = .83$; post-exposure $\alpha = .88$).

2.3.4 State appearance comparison

Three items constructed by Tiggemann and McGill (2004) were used to measure state appearance comparison retrospectively. The first item asked participants to rate the extent to which they thought about their appearance while viewing the advertisements (1 = *no thought about my appearance*, 7 = *a lot of thought*). The second and third items asked participants to what degree they compared their overall appearance and specific body parts to those of the models in the advertisements (1 = *no comparison*, 7 = *a lot of comparison*). Internal reliability was high ($\alpha = .92$).

2.3.5 Perceived realism

The four-item scale developed by Tiggemann et al. (2013) was used to measure perceived realism of the models in the advertisements, where a higher score indicated greater realism (e.g., "The models in the advertisements looked like they would look like in person").

For each item, participants indicated their agreement using a 7-point Likert scale (1 = *strongly disagree*, 7 = *strongly agree*). Internal reliability was acceptable (α = .81).

2.3.6 Trait tendency for appearance comparison

The Physical Appearance Comparison Scale (PACS) of Thompson, Heinberg, and Tantleff (1991) was used to measure the trait tendency to engage in social comparison based on appearance. The five items (e.g., "At parties or other social events, I compare my physical appearance to the physical appearance of others") were answered on a 5-point Likert-type scale (1 = *never*, 5 = *always*). Internal reliability was acceptable (α = .73).

2.4 Procedure

Women aged 18 to 30 years with English as their first language were recruited for a study on "the effectiveness of fashion magazine advertisements targeted at women". Participants were randomly allocated to one of the four experimental cells (pre-exposure informational message x disclaimer label) subject to equal *n* (*n* = 70) per condition. Participants then completed a brief questionnaire about their magazine and fashion consumption, and the pre-exposure VAS measures of mood and body dissatisfaction.

Next, participants were handed a folder containing the 15 advertisements presented in individual plastic sheets. Participants were asked to read the message on the cover while the researcher collected the previous questionnaires. Advertisements were viewed in the same order for 45 seconds each with a tone indicating when to turn to the next advertisement. In order to ensure that participants attended to the advertisements, they were asked to rate the effectiveness and creativity of each advertisement. Next participants completed the post-exposure VAS (mood, body dissatisfaction) and the measures of state appearance comparison, perceived realism, and trait appearance comparison. Participants were then asked to provide their age and ethnicity, and with their consent, height and weight were measured. Finally, participants completed a general recall task of associated brands (not

analysed). Each session lasted approximately 30 minutes, and participants received course credit for their participation.

3. Results

3.1 Sample Characteristics

The four experimental groups (pre-exposure informational message x disclaimer label) did not differ in age, $F(1, 276) = 0.04$, $p = .843$, $\eta^2 < .01$, body mass index, $F(1, 276) = 0.01$, $p = .914$, $\eta^2 < .01$, ethnicity, $x^2(2, n = 280) = 0.89$, $p = .642$, phi = .056, time spent looking at magazines, $F(1, 276) = 0.81$, $p = .369$, $\eta^2 < .01$, or time spent shopping for fashion, $F(1, 276) = 1.83$, $p = .177$, $\eta^2 = .01$. Pre-exposure body dissatisfaction also did not differ across experimental groups, $F(1, 276) = 0.16$, $p = .692$, $\eta^2 < .01$. Importantly, trait appearance comparison did not differ across the four experimental groups, $F(1, 276) = 2.13$, $p = .146$, $\eta^2 = .01$, which demonstrated that it was not reactive to the experimental manipulation.

3.2 Body dissatisfaction

A mixed between-within subjects ANOVA showed that there was a significant main effect of time on body dissatisfaction, $F(1, 276) = 6.44$, $p = .012$, $\eta_p^2 = .02$. As can be seen from the means in Table 1, there was an increase in body dissatisfaction from pre-exposure to post-exposure for all conditions. There was no significant interaction between disclaimer label and time, $F(1, 276) = 1.03$, $p = .311$, $\eta_p^2 < .01$, message type and time, $F(1, 276) = 0.60$, $p = .440$, $\eta_p^2 < .01$, or between disclaimer label, message type and time, $F(1, 276) = 0.11$, $p = .737$, $\eta_p^2 < .01$. Thus, there were no effects of disclaimer label or message type on change in body dissatisfaction.

3.3 State Appearance Comparison

As can be seen in Table 1, state appearance comparison appeared highest for participants who read the control message and saw a disclaimer label. However, the results of a two-way between-groups ANOVA showed that neither main effect for disclaimer label,

$F(1, 276) = 0.94$, $p = .334$, $\eta^2 < .01$, or message type, $F(1 , 276) = 0.81$, $p = .370$, $\eta^2 < .01$, nor their interaction, $F(1, 276) = 0.10$, $p = .919$, $\eta^2 < .01$, was statistically significant.

Table 1

Means (Standard Deviations) for Body Dissatisfaction, State Appearance Comparison, and Perceived Realism

	Control message		Digital alteration message	
	No disclaimer ($n = 70$)	Disclaimer ($n = 70$)	No disclaimer ($n = 70$)	Disclaimer ($n = 70$)
Pre-exposure body dis	46.37 (25.14)	52.12 (26.01)	43.64 (26.64)	46.98 (23.71)
Post-exposure body dis	47.88 (27.19)	55.71 (27.73)	44.47 (26.92)	48.86 (26.44)
State appear comparison	3.38 (1.70)	3.61 (1.77)	3.21 (1.74)	3.40 (1.79)
Perceived realism	2.55 (1.10)	2.52 (1.13)	2.59 (1.24)	2.57 (1.17)

Nevertheless, state appearance comparison was significantly correlated with post-exposure body dissatisfaction, $r(280) = .43$, $p < .001$. A hierarchical regression analysis was conducted to test whether state appearance comparison predicted change in body dissatisfaction, irrespective of disclaimer label and message condition. With pre-exposure body dissatisfaction entered at Step 1, state appearance comparison explained significant additional variance in body dissatisfaction at Step 2, $R^2_{Change} = .013$, $F_{Change}(1, 277) = 17.24$, $p < .001$, $B = 1.91$, $\beta = .12$. Thus state appearance comparison significantly predicted increased body dissatisfaction in response to thin ideal exposure, irrespective of disclaimer label and message condition.

3.4 Perceived realism

As can be seen in Table 1, perceived realism was quite similar across all experimental cells. An ANOVA confirmed that there were no significant main effects for disclaimer label,

$F(1, 276) = 0.03$, $p = .857$, $\eta^2 < .01$, or message type, $F(1, 276) = 0.11$, $p = .738$, $\eta^2 < .01$, or for their interaction, $F(1, 276) = 0.00$, $p = 1.000$, $\eta^2 < .01$. However, irrespective of disclaimer label and message condition, perceived realism was significantly positively associated with state appearance comparison, $r(280) = .23$, $p < .001$, such that the higher the perceived realism, the more appearance comparison processing engaged in. Perceived realism was not associated with post-exposure body dissatisfaction, $r(280) = .03$, $p = .656$.

3.5 Moderation by trait appearance comparison

Trait appearance comparison was significantly correlated with all of body dissatisfaction, $r(280) = .51$, $p < .001$, state appearance comparison, $r(280) = .47$, $p < .001$, and perceived realism, $r(280) = .17$, $p = .005$. A series of hierarchical regression analyses was conducted to investigate whether trait appearance comparison moderated the effect of disclaimer label or message type (or both) on body dissatisfaction, state appearance comparison, or perceived realism. Consistent with recommendations by Aiken and West (1991), trait appearance comparison scores were centred around the mean ($M = 3.26$). At Step 1, centred trait appearance comparison, disclaimer label (0, 1), and message type (0, 1) were entered (and centred pre-exposure body dissatisfaction when testing for moderation on body dissatisfaction). At Step 2, the three two-way product terms were entered, and at Step 3 the three-way product term was entered.

Step 2 as a whole did not explain significant additional variance in body dissatisfaction, state appearance comparison, or perceived realism, all $R^2_{Change} < .019$, $p > .05$. However, the individual product term for the interaction of trait appearance comparison and message type on perceived realism was significant, $B = 0.40$, $\beta = .17$, $p = .036$, although this result should be interpreted with caution. No significant three-way interactions were found at Step 3, all $R^2_{Change} < .001$, $p > .05$.

To illustrate the nature of the significant interaction between trait appearance comparison and message type on perceived realism, the relationship was graphed using minimum and maximum values to represent low and high levels of trait appearance comparison. As can be seen in Figure 1, the positive relationship between trait appearance comparison and perceived realism was significantly stronger in the digital alteration message condition than in the control message condition. Simple slopes analysis showed that for women who read the control message, there was no difference in perceived realism regardless of their level of trait appearance comparison, $B = 0.08$, $\beta = .05$, $p = .555$. In contrast, for women who read the digital alteration message, those lower on trait appearance comparison rated the models as less realistic, whereas those higher on trait appearance comparison rated the models as relatively more realistic, $B = 0.48$, $\beta = .28$, $p = .001$. When the sample was divided into quartiles on the basis of trait appearance comparison scores, there was no significant difference on perceived realism between the digital alteration and control messages for the lowest quartile, $t(62) = 0.37$, $p = .716$. However, for women high on trait appearance comparison (the highest quartile), perceived realism was rated significantly higher by those women who read the digital alteration message ($M = 3.51$, SD = 1.46) than those who read the control message ($M = 2.58$, $SD = 1.09$), $t\ (58) = 2.82$, $p = .007$.

4. Discussion

The findings of the current study are clear. Disclaimer labels did not reduce levels of perceived realism, social comparison, or body dissatisfaction. Likewise, a brief digital alteration informational message read before exposure to the fashion advertisements did not reduce perceived realism, social comparison, or body dissatisfaction in its own right, nor did it increase the effectiveness of disclaimer labels. However, regardless of pre-exposure message or disclaimer label, exposure to thin ideal advertisements did result in increased body dissatisfaction, with social comparison predicting the increase in body dissatisfaction,

and perceived realism associated with increased social comparison. Individual differences in the trait tendency to compare on the basis of appearance moderated the effect of pre-exposure message on how realistic women rated the models. Specifically, for women who read the digital alteration message, those low on trait appearance comparison rated the models as less realistic, whereas those high on trait appearance comparison rated the models as relatively more realistic.

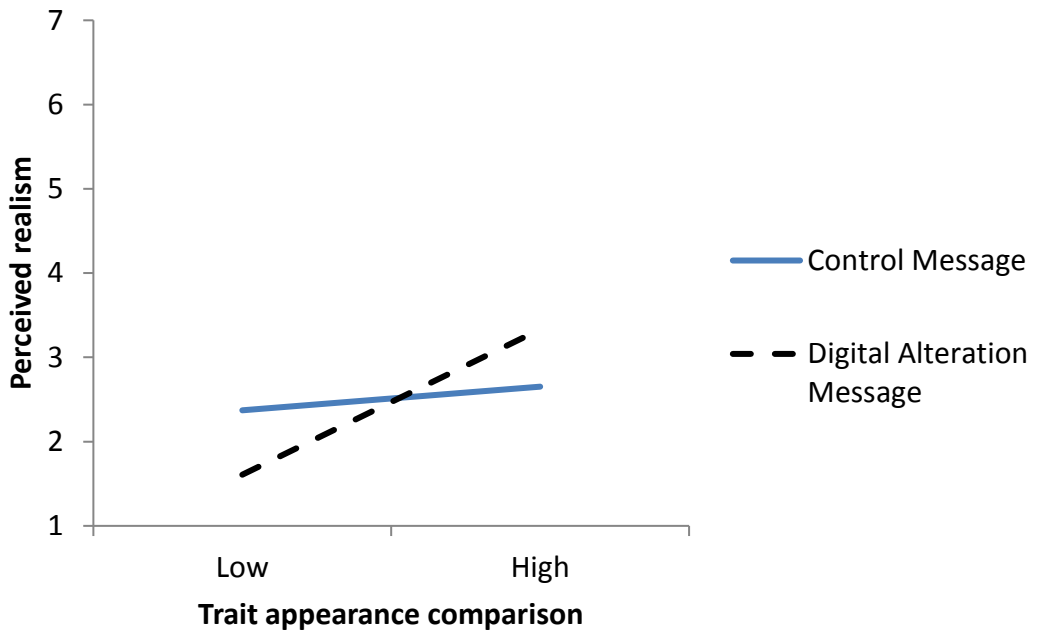

Figure 1. Moderation by trait appearance comparison of the effect of message type on perceived realism.

The finding that the disclaimer label did not improve women's body satisfaction following thin ideal exposure is consistent with the previous findings for fashion advertisements (Ata et al., 2013; Bury et al., 2015; Tiggemann et al., 2013). Further, in contrast to the underlying rationale, the disclaimer label did not decrease social comparison, consistent with the results of Bury et al. (2015) and Tiggemann et al. (2013). In addition, the main contribution of the current study is that the brief digital alteration informational message presented before the advertisements did not improve the effectiveness of the

disclaimer labels. Thus, the reason for the ineffectiveness of disclaimer labels must be more complicated than women simply not having enough time to consciously inhibit the otherwise spontaneously made appearance comparisons. Accordingly, it remains unclear as to why media literacy programs have generally proved effective in ameliorating negative body image effects from thin idealised media exposure (Levine & Murnen, 2009; Posavac et al., 2001; Yamamiya, et al., 2005), while disclaimer labels have not. It may be that the pre-exposure message tested here was not presented sufficiently early for women to fully consider the implications and consciously prepare to challenge the idealised imagery. Alternately, it may be that the one-off digital alteration message was too brief and mild in wording, in contrast to the longer duration, interactive involvement, and advocacy inherent in media literacy programs (Levine & Murnen, 2009; Levine & Smolak, 2008). Future research might usefully investigate the effectiveness of a more detailed and engaging pre-exposure informational message.

The current study also showed that the trait tendency to make comparisons on the basis of appearance has some influence on the effectiveness of body image interventions. Although trait appearance comparison did not moderate the effect of informational message or disclaimer label on change in body dissatisfaction or social comparison, it did so on perceived realism. In particular, for women high on trait appearance comparison the pre-exposure digital alteration message seemed to have a counterintuitive effect, as they rated the appearance of the models as more realistic than with the control message. It is possible that the text of the pre-exposure message, which mentioned improvement of appearance via digital alteration, may have primed the elaborate appearance schemas of women high on trait appearance comparison (Yamamiya et al., 2005). This finding is consistent with previous studies which have found negative effects from some forms of disclaimer labels for women

high on trait appearance comparison (Bury et al., 2015; Tiggemann et al., 2013). Thus, future interventions might explicitly aim to reduce women's trait appearance comparison tendency.

As with all research, the current findings should be interpreted in the context of some limitations. The findings cannot necessarily be generalised outside the current sample of young, predominantly white university students. Future research should investigate the effectiveness of digital alteration disclaimers in other segments of the population, including adolescent girls, who are typically avid consumers of fashion media. Similarly, the findings apply to advertisements from women's fashion magazines, and so cannot necessarily be generalised to other sources of thin ideal imagery, such as celebrity stories or fashion shoots (Slater et al., 2012; Want, 2009), indicating another area for future research. In addition, the current laboratory investigation could usefully be extended into naturalistic settings. Finally, trait appearance comparison would ideally have been assessed in a separate session, but was shown not to be reactive to experimental manipulation.

In conclusion, the presentation of a brief digital alteration informational message before exposure to fashion magazine advertisements did not increase the effectiveness of disclaimer labels in reducing the negative effects of thin ideal exposure. Nevertheless, the finding that trait appearance comparison moderated the effect of pre-exposure message type on how realistic women perceived the models suggests that individual differences should not be neglected in further research on interventions. Although disclaimer labels seem like a good idea, as yet no brief, workable, and easy-to-implement universal prevention measure has been identified that effectively reduces the negative effects of exposure to unrealistic thin ideal media imagery. Thus body image advocacy efforts might best be directed towards challenging and changing the representation of women's bodies in the media.

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