Body dissatisfaction: Can a short media literacy message reduce negative media exposure effects amongst adolescent girls?

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Objectives. This experimental study examined whether a brief video intervention identifying the artificial nature of media images could protect adolescent girls from negative media exposure effects and body dissatisfaction.

Design. A 2 (intervention condition) × 2 (exposure condition) between-groups design was used.

Methods. Participants were 127 British girls aged between 10 and 13 recruited from two secondary schools. Girls were assigned to one of four experimental conditions. An intervention video was shown to half of the girls immediately before they viewed ultra-thin models or control images. The video was developed by Dove’s Self-Esteem Fund and has the benefits of being professionally produced and freely available through the Internet.

Results. In the absence of the intervention video, viewing thin idealized models was associated with lower state body satisfaction and lower state body esteem than exposure to control images. However, viewing the video intervention immediately before exposure prevented this negative exposure effect.

Conclusion. The results suggest that, in the short term, this widely available video prevents girls from making damaging social comparisons with media models. Although this study only examined short-term effects, the findings add to the growing evidence that media literacy interventions may be useful tools in protecting young girls from body dissatisfaction.

Substantial levels of body dissatisfaction are reported by adolescent girls (Levine & Smolak, 2002). For example, research in the USA suggests that around 40% of adolescent girls are dissatisfied with their bodies (Presnell, Bearman, & Stice, 2004). Amongst UK samples, 48% of 9- to 12-year-old girls were dissatisfied with their body shape, with 22% reporting that they were too fat (Sands & Wardle, 2003), and 50% of girls aged 11–16 reporting body dissatisfaction (White & Halliwell, 2010). This is a serious concern as body dissatisfaction is associated with negative self-perception, depressed

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mood, and disordered eating (Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999). Furthermore, there is convincing evidence that the unrealistic and unhealthy body image ideals displayed in the media lead to body dissatisfaction amongst girls and women (e.g., Grabe, Ward, & Hyde, 2008). As a consequence, a growing body of research has evaluated interventions aimed at reducing body dissatisfaction (e.g., Stice, Shaw, & Marti, 2007) and many such interventions include a media literacy component. This involves critically analysing the content of media messages in an attempt to prevent the internalization of thinness as an appearance ideal and reduce the frequency of social comparisons with media models (Levine & Piran, 2004).

Typically, evaluations compare levels of trait body image and associated concerns before and after an intervention aiming to reduce body dissatisfaction (e.g., Richardson, Paxton, & Thomson, 2009). Two studies have examined whether media literacy interventions can disrupt social comparisons with media images and, therefore, prevent negative exposure effects (Posavac, Posavac, & Weigel, 2001; Yamamiya, Cash, Melnyk, Posavac, & Posavac, 2005). Both studies provided information about ‘Artificial Beauty’ (which highlighted the inappropriate ideals portrayed in the media and informed participants about the techniques used to produce these images) and ‘Genetic Realities’ (which explained that women are biologically predisposed to be heavier than the models shown in the media). In both studies, the non-intervention groups showed the pattern of negative media exposure effects typically found in the literature, whilst the interventions significantly reduced this effect. These findings are very encouraging. However, both studies focused on undergraduate women and it is unclear whether similar interventions could also reduce media exposure effects amongst younger girls. This is particularly important as younger girls (i.e., those not yet in college) are more strongly affected by the presentation of thin images than women over the age of 19 (Groesz, Levine, & Murnen, 2002). Amongst adult women internalization of the thin ideal is a known vulnerability factor for negative media exposure effects. Indeed, Yamamiya et al. (2005) hypothesized, and found, that negative exposure effects and intervention benefits would only be evident amongst women who internalized thinness as a personal ideal. Given the more potent media influence on younger girls (Groesz et al., 2002), we hypothesize that adolescent girls will be more vulnerable to media exposure and that all will benefit from the intervention.

The intervention selected for the current study is a short advertising clip that was produce by Dove as part of their Self-Esteem Fund and is included in their BodyTalk program (Dove Self-Esteem Fund, 2008). Recently, engagement in the complete BodyTalk program (called BodyThink in Australia) has been shown to increase media literacy and reduce internalization of the thin ideal amongst adolescent girls (Richardson et al., 2009). The specific video used in the current study focuses on the artificial nature of media images, so is comparable to the ‘Artificial Beauty’ intervention used in previous research. This clip displays the alteration that goes into creating a media image. The video focuses on alterations to a model’s face and includes showing how the dimensions of the face and neck are digitally altered. We have facilitated discussions of this video and it is clear that adolescent girls generalize from observing these specific alterations to apply them to adjustments that can be made to all body dimensions in advertising images. Theoretically, this should disrupt upward appearance-related social comparisons with models presented in the media as it demonstrates that they are not realistic or appropriate comparison targets. This intervention has the benefits of being professionally produced, freely available through the Internet and very short, so, if effective, it could be an extremely useful tool in tackling body dissatisfaction.
In summary, the current study aims to evaluate whether a short intervention focusing on the artificial nature of idealized images can reduce negative media exposure effects amongst young girls. We hypothesize that in the absence of any intervention, exposure to thin media images compared to control images will lead to decreased state body satisfaction and state body esteem amongst adolescent girls. However, after a brief media literacy intervention, we predict that there will be no differences in levels of state body satisfaction and state body esteem between girls who viewed thin models or control images.

**Method**

**Participants**
The sample consisted of 127 girls aged between 10 and 13 ($M = 11.6, SD = 1.1$), recruited from two schools in the South of England. The schools were within 3 miles of each other in a medium socio-economic area. Fifty-five girls were recruited from a co-educational school and 72 from a single-sex school. Forty-eight girls self-reported weight and height, their BMI ranged from 11.83 to 27.83, ($M = 17.07, SD = 3.68$).

There were no significant differences between the schools on: trait levels of body satisfaction (Garner, 1991), $F(1, 125) = 0.82$, ns, partial $\eta^2 = .01$; the restrained eating subscale of the Dutch Eating Behaviours Questionnaire (Van Strien, Frijters, Bergers, & Defares, 1986) $F(1, 125) = 1.41$, ns, partial $\eta^2 = .01$; the drive for thinness subscale of the Eating Disorder Inventory (Garner, 1991), $F(1, 125) = 0.73$, ns, partial $\eta^2 = .01$; or on BMI, $F(1, 46) = 0.14$, ns, partial $\eta^2 = .00$. Therefore, the data were collapsed across both schools for the analysis.

**Materials**
For each exposure condition, we used a single image selected from a magazine. The image for the model exposure condition was taken from a fashion spread in a popular UK teenage magazine. It showed two young female models wearing bikinis and high heels. In a pre-test with 10 undergraduate women, the models were judged to be very typical of those seen in magazines and approximately 15 years old. The image for the control condition depicted a coastline, selected from a UK newspaper supplement magazine.

**Measures**
The key baseline measures for the present study were a measure of trait body dissatisfaction and demographic details. As part of a broader project, we also assessed other body image related constructs referred to above that are not described or reported in detail here.

**Trait body dissatisfaction**
The Body Dissatisfaction Subscale of the Eating Disorder Inventory (Garner, 1991) consists of nine items assessing satisfaction with one’s body size, for example, ‘I think
my stomach is too big’. Participants rated these items on a five-point Likert scale ranging from 1 = strongly agree to 5 = strongly disagree. The Cronbach’s alpha for this scale in the current study was .87.

**State measures of body image**

We used two state measures of body image (body satisfaction and body esteem) which differed from the trait measure of stable and enduring body evaluations by asking participants to focus on the way they were feeling at that particular moment.

**State body satisfaction**

The Body Image State Scale (BISS; Cash, Fleming, Alindogan, Steadman, & Whitehead, 2002) consists of six items assessing state (‘at this moment’) satisfaction with aspects of one’s physical appearance. Based on the age of the participants in this study, the original nine-point rating scale was simplified to present a seven-point Likert scale. Higher scores indicated more positive evaluations. The Cronbach’s alpha for this scale was .83.

**State body esteem**

Eighteen items from the attractiveness and weight concern subscales of the Body Esteem Scale (BES; Franzoi & Shields, 1984) were administered as a state measure. Items relating to sex drive, sexual activities, and sex organs were not included as these were not considered appropriate for the current sample. Participants were asked to rate how they felt about each aspect of their body right now, on a five-point Likert scale ranging from 1 = have strong negative feelings to 5 = have strong positive feelings. The Cronbach’s alpha for this measure in the current study was .92.

The two state measures were moderately correlated, $r(127) = .53$, $p < .001$. The trait measure of body dissatisfaction showed a significant positive association with state body esteem, $r(127) = .21$, $p = .05$, but was not significantly correlated with the BISS, $r(127) = .14$, ns.

**Procedure**

Letters were sent to the parents of year 7 and year 8 girls explaining the study and asking for permission to invite their daughter to participate. Parents were asked to refrain from discussing the details of the study with their daughter until it had been completed. The study was described to the participants as ‘an evaluation of attitudes towards health, appearance and magazines’ which would require them to complete a short questionnaire and, on a separate occasion, evaluate a short video and magazine extract about health and life-style.

The first questionnaire assessing trait measures and demographics was administered by teachers in class. The second part of the study ran a week later. There were four classes in each school and within each school these classes were randomly allocated, through a computer generated randomization table (www.randomization.com), to one of the four conditions; an intervention–thin ideal exposure condition ($N = 37$), an intervention–control image exposure condition ($N = 30$), a no intervention–thin ideal exposure condition ($N = 31$), and a no intervention–control image exposure condition ($N = 29$). Therefore, each condition was run in both schools.
Experimental sessions were run back-to-back in a school classroom by the second author. The girls were asked not to talk to each other during the first part of the lesson and were told that there would be time for discussion later. In the intervention conditions, the ‘Evolution’ video clip was projected onto a screen in the classroom and shown twice. To support our cover story, the girls were asked to rate how much they enjoyed the video clip and how clear they found the message. Next, copies of images were distributed to each participant. Depending on condition, these either featured ultra-thin models or control images (i.e., landscape). The girls rated their impressions of the image in terms of how appealing it was, how much they liked it, and how much they thought other people would like it. The girls were told that current mood can influence our evaluations and were asked to fill in a short questionnaire which presented the BISS and BESs embedded amongst filler items. Finally, the girls were debriefed and the group discussed the video clip and the type of images displayed in advertising. The procedure for the no intervention group was identical except that the ‘Evolution’ video was shown after debriefing. This was to ensure that any benefits associated with watching the video were available to girls in the control group as well as to those in the intervention condition, and to inform the discussion that was conducted with every group.

Results

It was important to establish that there were no potentially confounding pre-existing differences between groups. Analysis of the trait measures revealed that there was no significant difference between the girls assigned to each condition on body satisfaction, $F(1, 123) = 2.19$, ns, partial $\eta^2 = .05$, restrained eating, $F(1, 123) = 0.55$, ns, partial $\eta^2 = .01$, or drive for thinness, $F(1, 123) = 1.28$, ns, partial $\eta^2 = .03$.

The impact of the intervention in protecting against negative exposure effects was examined by a 2 (intervention group) $\times$ 2 (exposure condition) ANOVA. This analysis was run separately for the two dependent variables. The means for these variables by condition are displayed in Table 1.

<table>
<thead>
<tr>
<th>Condition</th>
<th>BISS</th>
<th>State body esteem</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$M$</td>
<td>$SD$</td>
</tr>
<tr>
<td>No intervention/model</td>
<td>3.63</td>
<td>0.64</td>
</tr>
<tr>
<td>No intervention/control</td>
<td>4.45</td>
<td>0.80</td>
</tr>
<tr>
<td>Intervention/model</td>
<td>5.15</td>
<td>0.70</td>
</tr>
<tr>
<td>Intervention/control</td>
<td>4.94</td>
<td>0.78</td>
</tr>
</tbody>
</table>

There was a significant main effect for intervention of BISS scores, $F(1, 123) = 59.43$, $p < .001$, partial $\eta^2 = .37$, and exposure condition, $F(1, 123) = 5.46$, $p < .05$, partial $\eta^2 = .04$. However, these were qualified by a significant interaction between the two $F(1, 123) = 15.24$, $p < .001$, partial $\eta^2 = .11$, indicating that the pattern of responses to media exposure differed according to whether the participants were in the intervention group or not.

In order to examine the interaction effect, further analysis was run separately for those in the non-intervention and those in the intervention condition. In the non-intervention
group, the effect of condition was significant, $F(1,58) = 18.79, p < .001$, partial $\eta^2 = .25$, indicating that participants reported less body satisfaction after exposure to thin models ($M = 3.63, SD = 0.64$) than after control images ($M = 4.45, SD = 0.80$). In contrast, in the intervention group, there was no significant difference between state body satisfaction reported after viewing thin models ($M = 5.15, SD = 0.70$) or control images ($M = 4.94, SD = 0.78$), $F(1,65) = 1.28$, ns, partial $\eta^2 = .02$.

A similar pattern of results was found for state body esteem. The intervention group main effect was significant, $F(1,123) = 13.35, p < .001$, partial $\eta^2 = .10$. The exposure condition main effect was not significant, $F(1,123) = 1.77$, ns, partial $\eta^2 = .01$. However, this was qualified by an interaction effect that approached significance, $F(1,123) = 3.52, p = .06$, partial $\eta^2 = .03$.

In the no intervention group, state body esteem was significantly lower after viewing thin models ($M = 2.94, SD = 0.36$) than in the control condition ($M = 3.26, SD = 0.62$), $F(1,58) = 6.28, p < .05$, partial $\eta^2 = .10$. After the intervention, video media exposure did not have a significant impact on state body esteem, $F(1,65) = 0.13$, ns, partial $\eta^2 = .00$. In this case, there was no significant difference in the levels of state body esteem reported after viewing thin models ($M = 3.50, SD = 0.63$) and after control images ($M = 3.44, SD = 0.59$).

**Discussion**

The current study demonstrated that providing information about the unrealistic nature of media images may have immediate benefits for young girls. Specifically, it prevented the negative exposure effects associated with viewing ultra-thin models that are typically found in this research area and that were reported by girls in this study who did not receive the intervention.

Theoretically, we assume that the intervention disrupted the upward social comparisons that many young girls make when viewing idealized media images. Moreover, we propose that the comparison is avoided because the media models have been construed as artificial and, therefore, an inappropriate comparison target. However, we did not test these assumptions directly and future research could evaluate the psychological processes associated with exposure. In addition, this study focused on adolescent girls, yet there is growing evidence that young men and adolescent boys may also be negatively affected by exposure to idealized media models (Barlett, Vowels, & Saucier, 2008; Blond, 2008). It is likely that similar interventions could benefit them.

There are a number of limitations to the current study. Many of the participants did not know their weight and height so we were unable to calculate BMI for these girls. This is less worrying as there were no differences between conditions on trait body satisfaction, but it would have been preferable to have full data on BMI so that we can be confident that the differences identified in this study do reflect the contextual factors. Similarly, it would have been preferable to randomly allocate at the individual rather than the class level, but this was not practical in the current study. However, the equivalence of trait body satisfaction across conditions and the fact that each condition was run with two classes, one from each of the schools, goes some way to protect against the possibility that class differences made the girls more or less responsive to the intervention or media exposure. Also, given the age range of the participants it is likely that there was considerable variation in the girls’ progression through puberty. This is another factor that may influence the research findings and should be considered...
in future research. We did not collect data on the ethnicity of our participants; however, the vast majority of the girls were White. As the majority of media models are White and relatively little is known about media exposure effects amongst other ethnic groups, this was an advantage. Still, further work is needed to explore the impact of the intervention amongst other ethnicities. We only examined the short-term impact of the intervention. Existing literature suggests that prolonged intervention programmes are most effective at changing trait levels of body satisfaction and associated constructs (Stice & Shaw, 2004). We would not suggest that this brief intervention would have a long-term impact on girls’ social comparison patterns. However, the results support existing evidence that presenting information about the ‘artificial nature of beauty’ is an effective tool in an intervention package.

In summary, these findings extend previous research by demonstrating that the benefits of brief media literacy interventions are applicable to adolescent, as well as adult women. To our knowledge, this is the first study to evaluate ‘Evolution’ as a stand-alone intervention. The findings suggest that young girls would benefit from watching this easily accessible, brief video.

References


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