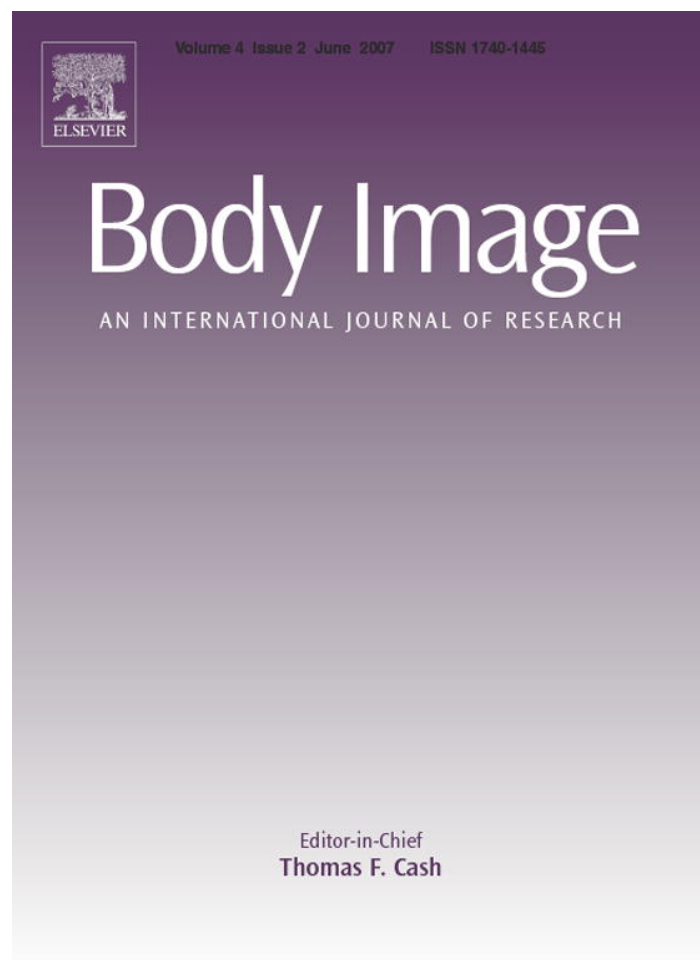


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## The impact of thin models in music videos on adolescent girls' body dissatisfaction

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### Abstract

Music videos are a particularly influential, new form of mass media for adolescents, which include the depiction of scantily clad female models whose bodies epitomise the ultra-thin sociocultural ideal for young women. The present study is the first exposure experiment that examines the impact of thin models in music videos on the body dissatisfaction of 16–19-year-old adolescent girls ( $n = 87$ ). First, participants completed measures of positive and negative affect, body image, and self-esteem. Under the guise of a memory experiment, they then either watched three music videos, listened to three songs (from the videos), or learned a list of words. Affect and body image were assessed afterwards. In contrast to the music listening and word-learning conditions, girls who watched the music videos reported significantly elevated scores on an adaptation of the Body Image States Scale after exposure, indicating increased body dissatisfaction. Self-esteem was not found to be a significant moderator of this relationship. Implications and future research are discussed.

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**Keywords:** Music videos; Thin ideal; Adolescent girls; Body dissatisfaction

### Introduction

Music videos are a relatively recent, but increasingly influential form of mass media for adolescents (Roberts, Henrikson, & Foehr, 2004). There has been concern about documented negative effects with respect to violence and aggression (Anderson et al., 2003; Rustad et al., 2003), sexuality and gender roles (Brown, Steele, & Walsh, 2002; Ward, Hansbrough, & Walker, 2005), and alcohol use (Van den Bulck, Beullens, & Mulder, 2006), but much less attention has been paid to the fact that music videos also depict sociocultural ideals of the body perfect. Music videos often feature scantily clad models whose dance movements further highlight the

size, shape, and proportions of their bodies. Among these idealized models are young women who epitomize the female ideal of ultra-thinness, and who can function as aspirational role models for adolescent girls (Dittmar, 2007; Tiggemann, 2005). Given the growing evidence that unrealistic body ideals in other forms of mass media can increase body dissatisfaction (see review by Levine & Harrison, 2004), it seems likely that thin models in music videos have detrimental effects on adolescent girls' body image. Yet, their role in causing body dissatisfaction among adolescent girls still needs to be examined.

The reasons why this is a significant research gap that needs to be addressed unfold from more general to specific when we consider previous findings and current trends in conjunction. Body dissatisfaction, a psychologically salient discrepancy between a person's perceived body and their ideal body (Halliwel &

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Dittmar, 2006), is important to study because it leads to negative self-focused affect and unhealthy body-shaping behaviors (Cash & Pruzinsky, 2002; Thompson, 2004). Heightened body dissatisfaction is likely when actual body sizes are highly discrepant to the sociocultural body ideal, and this is likely to be a growing trend given the increasingly thinner ideal for girls and women in the context of rising obesity in the US, with over 30% of adolescent girls overweight and over 15% obese (American Obesity Association, 2002), and other developed countries. The sociocultural ideal has become synonymous with ultra-thinness, with idealized media models often more than 20% underweight and a Body Mass Index (BMI) in the range of 14–16 (Dittmar, 2007). The extremity of this ‘cult of the skinny’ (Spencer, 2006) becomes clear when we consider that 15% underweight constitutes a diagnostic criterion for Anorexia Nervosa (American Psychiatric Association, 2000), and a BMI of 18.5 the lower end of a biologically healthy body size (Thompson, 2004).

Consistent research evidence documents that the mass media are a pervasive force in shaping body ideals (see review below), and adolescents girls are particularly likely to be sensitized to this influence because appearance and the ‘body perfect’ are central to female identity (e.g., Frederickson & Roberts, 1997) and they are in a phase of identity transition to womanhood (e.g., Grogan, 1999). Although not all music videos feature ultra-thin models, a sizeable proportion do (e.g., Tiggemann, 2005), including videos who feature young all-girl bands who are marketed to appeal to adolescent girls. We have provided a developmental account of how girls use age-relevant icons of the thin sociocultural body ideal as aspirational role models and, extrapolating from the evidence that 5–7-year-old girls report lower body esteem and express a greater desire to be thinner after exposure to images of Barbie dolls (Dittmar, Halliwell, & Ive, 2006), it stands to reason that thin and glamorous girl teen celebrities in music videos could function as aspirational role models for adolescent girls.

To date, research on media exposure to thin models and body image has focused on TV programmes, magazines, and advertisements, but music videos are becoming an increasingly popular form of entertainment amongst young people. MTV, the first TV channel launched in 1980 exclusively for the showing of music videos, now boasts over 342 million viewers worldwide (statistics from [www.mtv.co.uk](http://www.mtv.co.uk)). A survey of 12–34-year olds revealed that 78% of 12–19-year-old girls watch MTV regularly, with adolescents 12–19 years old the most frequent viewers, watching an average of 6.4 h

per week (Rich et al., 1998). In addition to MTV, cable TV typically boasts many additional channels dedicated to playing music videos, and public places, such as stores, bars, and clubs, increasingly display music videos on large TV screens, making them an inescapable, almost omnipresent, form of media. Hence it is likely that adolescent girls’ current exposure to music videos is much higher than the figure of 6.4 h per week suggests.

As mentioned at the beginning of this paper, there is a substantial body of research showing that music videos have significant effects in influencing adolescents’ beliefs, attitudes, and behaviors with respect to aggression, violence, sexuality, gender roles, and alcohol use (Anderson et al., 2003; Brown et al., 2002; Rustad et al., 2003; Van den Bulck et al., 2006; Ward et al., 2005). Yet, their impact on adolescent body dissatisfaction has remained curiously under-examined, despite good reasons for suspecting negative exposure effects. Our proposal that female models depicted in music videos often reflect the thin ideal, and are depicted in ways that emphasize their physical appearance, such as close-ups of dance movements, is supported by a content analysis of MTV (Gow, 1998). Two correlational studies have shown that time spent watching music videos is linked with adolescent girls’ body dissatisfaction (Borzekowski, Robinson, & Killen, 2000) and drive for thinness (Tiggemann & Pickering, 1996). However, their correlational design cannot identify cause–effect relationships; it may be that body-dissatisfied girls choose to watch more music videos.

Controlled experimental exposure is best suited to gauging the immediate psychological impact of music videos as a possible *cause* of girls’ body dissatisfaction. To date, there is only one such experimental study, with women students as respondents, aged between 18 and 30 years (Tiggemann & Slater, 2004). These women were exposed to clips from music videos that focused either on appearance, emphasizing female thinness and attractiveness, or that presented ordinary-looking people and scenic shots. Instructional set was also manipulated, to encourage or discourage social comparison with the women in the video clips, but did not have any effect. The main findings were that exposure to appearance-focused music videos increased women’s body dissatisfaction, as expected, and that this effect was due to comparison processing. Thus, these findings provide good evidence that exposure to thin idealized models in music videos increases body dissatisfaction among young women. However, given the focus on college students, we have yet to study the impact of such

exposure on the heaviest viewers of music videos: younger, adolescent girls.

In addition to examining body dissatisfaction as an outcome of exposure to music videos, it seems important to consider their potential impact on mood. First, links have been documented between body dissatisfaction and negative affect (e.g., Halliwell & Dittmar, 2006), suggesting that the ideal models in music videos may not only increase body dissatisfaction, but also lower mood. Second, it is well documented that music alters moods and emotional states (Murrock, 2005; Schellenberg et al., 2007), so we would expect that exposure to the songs in music videos affects young listeners' mood. The complex role of music in adolescents' mood regulation is described in an in-depth qualitative study with Finnish teenagers, which used grounded theory to generate a reciprocal model of mood effects in which music and characteristics of the individual interact (Saarikallio & Erkkilä, 2007). With respect to the present study, these findings have two implications. First, they lead us to expect that music videos will impact on adolescent girls' mood, although we cannot hypothesize whether effects are likely to be positive or negative. Second, they suggest the importance of distinguishing between mood effects that may occur as a consequence of listening to the songs in music videos on the one hand, and mood effects that could result from seeing thin models in music videos.

We now turn to experimental studies that examine exposure to ultra-thin female models as an immediate cause of body dissatisfaction in other, commonly studied, forms of mass media, such as print or TV advertising. A recent meta-analysis of 25 such experiments found an effect size of  $d = -.31$  across the studies showing that, on average, women felt worse about their bodies after exposure to the thin ideal than other types of images (Groesz, Levine, & Murnen, 2002). Moreover, this negative impact was more pronounced among adolescent girls under 19 years of age,  $d = -.36$ , and later, single experimental studies also suggest that adolescent girls are particularly vulnerable to thin media models (e.g., Clay et al., 2005). Thus, we have every reason to expect that thin models in music videos would increase adolescent girls' body dissatisfaction compared to a neutral context without any appearance-related stimuli. A further reason for why music videos may be a distinctively influential form of mass media derives from their format, which typically lacks the bounds and event-based structure of TV programmes, thus mimicking the structure of dreams and fantasies (Aufderheide, 1987).

However, not every individual is affected negatively by exposure to idealized media images, which suggests the need to examine vulnerability factors. Among adult women, a diverse range of possible moderators has been examined (see reviews in Dittmar, 2005, 2007; Levine & Harrison, 2004; Wykes & Gunter, 2005). In the present research, we chose to focus on self-esteem, for two reasons. First, there is likely to be a link between self-esteem and vulnerability to body dissatisfaction in adolescent girls, because they have been shown to be particularly vulnerable to the impact of idealized media models, as well as having particularly low self-esteem (Clay et al., 2005). Second, self-esteem emerged as a significant moderator of young women's body dissatisfaction after exposure to a highly attractive female target, where women with low self-esteem are more vulnerable to increased body dissatisfaction following upward social comparison (Jones & Buckingham, 2005). Although the targets examined were not media models specifically, upward social comparison has been identified as one of the mechanisms leading to increased body dissatisfaction after exposure to idealized media models (Tiggemann & Slater, 2004). Thus, we expect that adolescent girls with low self-esteem may be more vulnerable to increased body dissatisfaction following exposure to the thin ideal in music videos than girls with high self-esteem.

Taking all these considerations together, we designed an experiment with three intervention conditions. In the main experimental condition, adolescent girls were exposed to three music videos, chosen because they featured adolescent, thin, and glamorous models who were members of all-girl bands high in the charts at the time when the study was conducted. In a second condition, respondents listened to the three songs from those same music videos, but did not see them. This control condition was included so that any effect of the music videos can be attributed unambiguously to the visual images in the music videos, and not to the songs or lyrics. The previous exposure experiment on music videos by Tiggemann and Slater (2004) used different video clips in the thin models versus ordinary people conditions, which may have introduced potential uncontrolled factors, such as differences in music styles or lyrics. Thus, using the same songs, with and without visual images, is a methodological benefit. Finally, we designed a second control condition, in which there were no stimuli at all that related to either appearance or music videos; instead, respondents were given a list of twenty neutral words to memorize. All three interventions lasted for a similar length of time, approximately 10 min.

Self-esteem, the proposed moderator, was measured before exposure with an age-appropriate, validated scale (Battle, 1981). As outcome measures, two scales were chosen, widely used and appropriate for adolescents, one to assess current mood (Watson, Clark, & Tellegen, 1988) and the other state body dissatisfaction (Cash et al., 2002), whose format we adapted for the present experiment in pilot work. Current mood and body dissatisfaction were measured both before and directly after exposure, so that we can assess within-respondent change as a function of intervention condition. The measure of body dissatisfaction, central to the present research, was adapted to ensure sufficient sensitivity to detect changes over a relatively brief time span. The pre-post test design of the present research allows for a direct measurement of changes in mood and body dissatisfaction within-respondent, but it involves the potential risk of alerting respondents to the true purpose of the experiment. For this reason, the study used an age-appropriate cover story, which also fitted well with the word recall task in the baseline condition. We told respondents that the research was concerned with investigating the effects of modern forms of distraction (such as music or videos) on memory, and they were told that they would engage in a 'distraction' task for which their memory would be tested later.

The study tested the following three hypotheses. First, exposure to music video songs is likely to have an impact on adolescents' mood. The visual depiction of thin models in music videos may have an additional, or different, impact compared to just listening to the songs, but should lower girls' mood. Second, and central to the present research, music videos with thin models, but not the songs by themselves, are predicted to increase girls' state body dissatisfaction. Third, and finally, self-esteem may moderate the proposed negative effect of music videos on girls' body dissatisfaction, such that girls with low self-esteem could be more strongly affected than girls with high self-esteem.

## Method

### *Participants*

The sample consisted of 87 girls, aged 16–19 years, all from the same all-girl catholic Sixth Form College in the North East of England (equivalent to US High School). 30 girls were exposed to music videos featuring thin, attractive models, 30 listened to the music video songs, and 27 were asked to learn a list of 20 neutral words. No participant had to be excluded from the study due to an excessively high score on the

lie detection sub-scale of the self-esteem measure used (see below), which would have indicated a lack of honesty.

The girls were predominantly white-Caucasian (over 95%), and their average BMI (calculated as weight (kg)/height (m<sup>2</sup>)) was 21.56, with 9.7% girls classified as underweight, 82.2% as normal weight, 6.5% as overweight, and 1.6% as obese, using population-relevant guidelines (Zaninotto et al., 2006). The girls reported listening to music for 16.12 h a week on average, and watching music videos for 3.74 h per week.

### *Experimental intervention and measures*

#### *Experimental materials*

Respondents took part in one of three intervention conditions. In the experimental condition, they watched three music videos, selected because they featured all-girl bands (Pussycat Dolls, Sugarbabes, and Girls Aloud) who occupied the highest chart position during the week the experiment was conducted (starting 4th December 2005). The girl singers epitomised the ultra-thin beauty ideal for young women, wore revealing dress, and were featured in such a way that their appearance was emphasized. In the first control condition, respondents listened to three songs, which were the singles featured in the music videos used in the experimental condition. Thus, they were exposed to the songs and lyrics of the music videos, but not to the visual material. The second control condition involved no music videos, music, or appearance-related stimuli: respondents were presented with a list of 20 neutral words and asked to memorize them (such as, fountain or acrobat). This task was also chosen in order to support the cover story used for the experiment (see Section Procedure for details). Each of these three interventions took a comparable length of time, approximately 10 min.

#### *Self-esteem*

Trait self-esteem, the proposed moderator of exposure effects, was measured before exposure, using the Culture-Free Self-Esteem Inventory (CFSEI; Battle, 1981), which consists of forty items, measuring three separate subscales of general, social, and personal self-esteem. Furthermore, eight items in the scale are lie detection items, which indicate the honesty of the participant. The CFSEI has been shown to have good convergent validity (Hayes & Drummond, 1998) and has been widely used with adolescents (e.g., Holloday et al., 1996). Answers are given in a dichotomous yes/no format, and the number of responses indicating high self-esteem is added up to produce scale scores.

### *Mood*

The Positive and Negative Affect Scale (PANAS; Watson et al., 1988) is a widely used measure of mood, with high internal reliability and high construct validity among adolescents (Huebner & Scott, 1995). It consists of 20 emotive description words, half of which are positive (e.g., proud, inspired) and half negative (e.g., distressed, upset). In the state version, assessing current mood, participants rate how well these affect terms describe how they feel right now, using 5-point Likert-type scales, ranging from 1 *not at all* to 5 *extremely*. Mood was measured twice, before and after exposure. In the present study, the scales had high internal reliability, with  $\alpha = .86$  and  $\alpha = .87$  for positive affect, and  $\alpha = .77$  and  $\alpha = .77$  for negative affect, respectively. These figures compare well with the coefficients reported in the original research: .89 for positive affect and .85 for negative affect (Watson et al., 1988).

### *Body dissatisfaction*

The Body Image States Scale (BISS; Cash et al., 2002) is designed to measure the transitory aspects of evaluative or affective body image, i.e. body dissatisfaction. It is a sensitive measure that can detect momentary changes, and consists of six questions regarding how satisfied a person feels with their physical appearance ‘right now at this present moment.’ The BISS has high internal reliability, and good construct validity (Cash et al., 2002). Although the scale’s ability to detect fluctuations across time has been demonstrated (e.g., Melnyk, Cash, & Janda, 2003), there are reasons to suspect that the exposure intervention in the present study, lasting for only 10 min, may involve a time difference that is so brief that it may potentially compromise the scale’s sensitivity to detect any changes in body dissatisfaction. The response options on the 9-point bipolar Likert-type scales usually employed are memorable, and so answers before exposure can easily be remembered after exposure. Therefore, in order to enhance the sensitivity of the scale, visual analogue scales (VAS) were substituted as a response format. VAS have been consistently used in experimental exposure studies of thin media ideals (e.g., Tiggemann, 2003), due to their enhanced sensitivity in measuring body dissatisfaction. The suitability of this modification was tested in a pilot study. Thus, instead of using the original 9-point response format ranging from, for example, 1 *extremely dissatisfied* to 9 *extremely satisfied*, lines 9 cm long were presented to respondents, anchored with the two extremes, and they were asked to place a mark on the point of the line that best represented how they felt right

now. In the present study, the adapted BISS showed excellent internal reliability both before and after exposure, with  $\alpha = .80$  and  $\alpha = .88$ , which compares well with the coefficient reported in the original validation study,  $\alpha = .77$  (Cash et al., 2002).

### *Demographics*

The final section of the questionnaire recorded respondents’ age, height, weight and ethnicity. It also asked open-ended questions regarding music preferences, how many hours participants listened to music per week, how many hours they watched music videos per group, and whether they identified with girl bands.

### *Procedure and ethical issues*

Girls took part in the study in small groups on a volunteer basis, during free lessons, which meant that, due to the opportunistic nature of this sample, true random assignment to conditions on an individual basis was not possible. The experiment was introduced as an investigation into how forms of popular distraction (e.g., watching music videos, listening to music) affect memory performance in teenage girls, in order to disguise its focus on body image and affect. They were assured of anonymity and their right to withdraw from the study at any time. Respondents then completed a questionnaire containing the self-esteem, affect, and body dissatisfaction measures, after which they took part in the 10-min intervention. Depending on condition, they were given different instructions. In the experimental condition, they were told that they would watch three music videos and should “pay close attention to the images, as you will be tested about these later.” In the first control condition, which involved listening to three songs, participants were told to “pay close attention to the lyrics, as you will be tested about these later.” In the second control condition, participants were handed a list of words, which they were told to memorize. After the intervention, respondents completed the affect and body dissatisfaction measures a second time, which was disguised as a distracter task before the memory test. In order to support the cover story further, respondents then received a brief, separate questionnaire, in which they were asked questions about the materials they had been exposed to, which differed by condition. In the experimental condition, the questions focused on visual aspects of the music videos (such as, “How many members of the Pussycat Dolls had red hair?”); in the first control condition, respondents were asked to complete lines of lyrics from the songs they had just listened to (such as, “If you’re ready for me boy, you better push the . . .”); in

the second control condition, respondents were asked to recall as many of the words from the original list of 20 as they could. At the end of the study, demographic information was collected. Given that respondents had to be deceived about the true purpose of the experiment, they were fully debriefed. After being told that the study was actually investigating the effects of music videos on the body image of adolescent girls, respondents were given information regarding where to seek support, should they have any concerns regarding their own body image. Respondents invariably reacted to the debriefing, usually expressing surprise, and none of their responses indicated that they had guessed the true purpose of the research.

## Results

Consistent with previous findings on age-related increases in body dissatisfaction among girls (Clay et al., 2005), we found a marginally significant correlation between age and body dissatisfaction before the intervention ( $r = -.20$ ;  $p = .07$ ), and we therefore controlled for age in all statistical analyses. Means and standard errors of girls' pre- and post-exposure affect and body dissatisfaction scores in each intervention condition are shown in Table 1. It is worth noting that the absolute level of negative mood reported is very low, given that a total score of 10 would reflect ratings of "not at all" for all negative affect items, thus indicating a total absence of negative affect. In contrast, positive mood was moderate, with average total scores close to the midpoint of the scale (which is 30).

For the statistical analyses, we divided respondents into those with relatively low and high self-esteem through a median split on their overall score on the CFSEI, where girls who scored 30 or above were classified as having high self-esteem and girls who scored below 29 as having low self-esteem. The impact of the intervention condition was then analysed by 2 (level of self-esteem)  $\times$  3 (condition) ANCOVAs, using age as a co-variate, separately for affect and body dissatisfaction.<sup>1</sup> In order to measure within-respondent change in affect and body dissatisfaction from pre- to post-exposure, we entered the relevant pre-exposure score as a co-variate, using the corresponding

post-exposure score as the outcome measure, as recommended (Finkel, 1995). In order to test our hypotheses directly, each analysis included a set of a priori comparisons among exposure conditions.

### Affect

In order to test whether the music in the videos affects adolescent girls' mood, and possibly more strongly or differently when coupled with exposure to thin models, we compared the word recall task with the two conditions where girls listened to the music video songs, and then contrasted exposure to the songs only with girls' seeing the music videos. For negative affect, the only significant predictor was negative affect pre-exposure. Exposure condition had no systematic impact, either by itself,  $F(2, 79) = 0.80$ , or in conjunction with self-esteem,  $F(2, 79) = 1.90$ . Thus, there was no impact of the intervention condition on negative affect; the mean total scores remain low although there is a slight elevation in the conditions where girls were exposed to music, with  $M_{\text{adj}} = 11.97$  (0.52) for word recall,  $M_{\text{adj}} = 12.72$  (0.57) for songs, and  $M_{\text{adj}} = 12.83$  (0.50) for videos. In contrast, for positive affect, there was a significant main effect for exposure condition,  $F(2, 79) = 3.56$ ;  $p < .05$ . This effect did not interact with self-esteem,  $F(2, 79) = 0.84$ . The comparisons between the intervention conditions showed that positive mood after the word recall task was significantly higher than after exposure to music video songs,  $CE = 3.13$ ;  $p = .01$ , but that it did not matter whether girls only listened to the songs or saw the music videos with the models,  $CE = 0.87$ . The mean total scores (with standard errors in brackets) were  $M_{\text{adj}} = 26.55$  (0.95) for word recall,  $M_{\text{adj}} = 22.99$  (1.06) for songs, and  $M_{\text{adj}} = 23.87$  (0.95) for videos. In summary, these findings suggest that the songs and lyrics in the music videos affected girls' mood, in the sense of lowering positive mood when compared to a neutral task, but that visual exposure to thin models had no additional or different impact on mood. Thus, there was partial support for the first hypothesis.

### Body dissatisfaction

With respect to our hypothesis that exposure to thin models in music videos has a detrimental effect on girls' body dissatisfaction, we used a different set of a priori comparisons among exposure conditions, where the first contrast compared exposure to music videos with the other two conditions, and the second contrast compared listening to music video songs with memorising a list of

<sup>1</sup> The study included a second measure of body image, the Contour Drawing Rating Scale (Thompson & Gray, 1995), administered only once, after exposure. Respondents rate silhouettes to indicate their current and their ideal body size, but this measure was unaffected by music video exposure, most likely indicating that brief exposure has no influence on trait body image.

Table 1

Girls' mean total scores for positive and negative affect and body dissatisfaction pre- and post-intervention (standard errors are given in brackets)

	Positive affect	Negative affect	Body dissatisfaction
Word recall task			
Pre-intervention	26.09 (1.45)	14.45 (0.81)	28.80 (1.43)
Post-intervention	25.86 (1.47)	12.44 (0.70)	28.68 (1.58)
Songs and lyrics only			
Pre-intervention	28.52 (1.61)	14.19 (0.90)	29.46 (1.59)
Post-intervention	24.19 (1.63)	13.04 (0.78)	29.86 (1.76)
Music videos with models			
Pre-intervention	25.74 (1.38)	12.57 (0.78)	29.53 (1.37)
Post-intervention	22.90 (1.40)	12.19 (0.67)	32.18 (1.51)

Note. Estimated marginal means are presented adjusted for age.

neutral words. In terms of the body dissatisfaction hypothesis, listening to the music video songs without seeing thin models represents a direct control condition, in which all aspects of exposure are identical, except the visual material in the music videos. The word recall task represents a baseline condition in which there are no stimuli related in any way to appearance, body size, or music. As we had hypothesized, exposure condition had a significant impact on adolescent girls' state body image,  $F(2, 79) = 3.74$ ;  $p < .05$ . The first planned comparison confirmed that their body dissatisfaction showed a significantly greater increase from pre- to post-exposure when they had watched music videos, compared to the two control conditions,  $CE = 2.53$ ;  $p < .01$ . As expected, the second contrast showed that there was no significant difference between girls who had listened to the music video songs and girls who had completed the memory task,  $CE = 0.54$ . In summary, it was the visual images in the music videos, depicting thin female models, which raised girls' body dissatisfaction significantly, whereas the music itself had no such detrimental effect. The relevant mean total scores are  $M_{adj} = 32.34$  (0.74) for videos,  $M_{adj} = 30.08$  (0.86) for songs, and  $M_{adj} = 29.54$  (0.78) for word recall. Thus, the second hypothesis was strongly supported.

With respect to the third hypothesis, the findings show that girls' level of overall self-esteem does not moderate this pattern of results, as evidenced by the lack of a significant interaction with exposure condition,  $F(2, 79) = .10$ . We checked whether findings would differ, if we used the different subscales of the self-esteem measure as moderators, but the pattern of findings was unaffected. Thus, the third hypothesis was not supported. Adjusted total mean scores of girls' body dissatisfaction in the three interventions conditions, separately for those high and low in self-esteem, are shown in Fig. 1.

## Discussion and conclusion

A key finding of the present study is that adolescent girls exposed to thin models in music videos show a significantly larger increase in body dissatisfaction from pre- to post-exposure in comparison to girls who had listened to the songs without visual input and girls in the baseline, word recall, intervention. This finding is consistent with the only other experimental study of the effects of music video exposure by Tiggemann and Slater (2004), who showed that exposure to clips of the thin ideal in music videos led to increased body dissatisfaction amongst college-aged women students. However, our research offers two extensions. First, it demonstrates such an effect in adolescent girls, which had not been done before, but which appeared vital, given that adolescents are the heaviest viewers of music videos. Second, the present findings provide evidence that a 10-min exposure to music videos leads to a significantly greater increase in adolescent girls' body dissatisfaction due to the visual depiction of ultra-thin

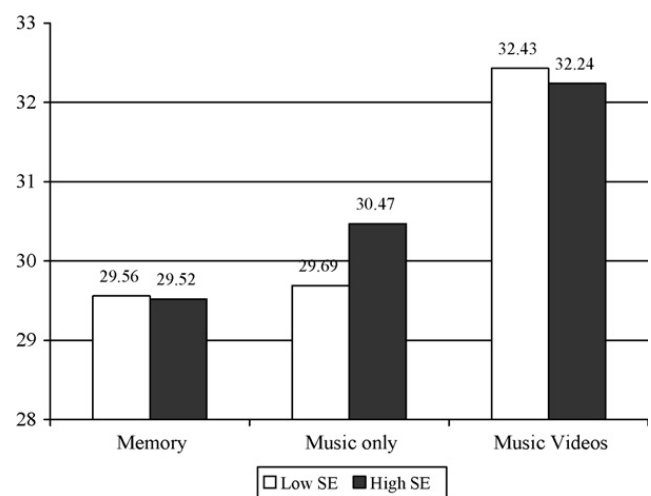


Fig. 1. Adolescent girls' body dissatisfaction as a function of intervention condition and level of self-esteem.

idealized models, when compared to the effect of listening to the lyrics and songs on these videos.

Furthermore, we hypothesized that self-esteem could be a significant moderator of the relationship between music video exposure and body dissatisfaction, but this was not supported. Instead, it appears that adolescent girls with both high and low self-esteem are equally vulnerable to the negative impact of music videos on their body image. This finding could be explained by drawing on Tiggemann (2005) who suggested that low self-esteem does not make adolescent girls more prone to high body dissatisfaction, but rather that high body dissatisfaction makes them more prone to low self-esteem. Thus, future exposure experiments may wish to include a measure of transitory, or state, self-esteem as an outcome, in addition to measures of body image. Furthermore, it is possible that other vulnerability factors, such as high dispositional levels of internalisation of the thin ideal or disordered eating symptoms may moderate the relationship, which should be examined in further research.

With respect to mood, we did find a systematic impact of the music in the videos, in the sense that all girls who were exposed to the songs, with and without visual material, reported significantly lowered positive affect compared to the girls in the baseline condition who memorized lists of neutral words. We did not find additional, or different, mood effects as a function of exposure to thin models in music videos. This may suggest that generalized mood effects are relatively independent of body dissatisfaction, which is consistent with our recent finding that body-related self-discrepancies are associated specifically with affect about one's body, rather than with affect in general (Dittmar, Phillips, & Halliwell, 2007). Thus, future research could benefit from including specific body-focused affect measures.

Returning to the central findings of the present research, we isolated the detrimental effect of music videos on adolescent girls' body satisfaction as due to the depiction of thin models likely to function as age-relevant aspirational beauty role models. There is increasing concern with the effects of ultra-thin models on adolescent girls' body image and eating behaviors, as evidenced by recent attention to so-called "pro-ana" websites which promote ultra-thinness and, some claim, anorexic eating (Spencer, 2006), and particularly by the controversy over ultra-thin fashion models and "dress size zero", which led to the banning of catwalk models who are underweight in Milan and Madrid in September 2006 (Dittmar, 2007). Media intervention programs have been developed to educate young people about the

adverse effects of the media on body image. They aim to develop skills in resisting media pressure and have shown some success in doing so (Levine & Harrison, 2004). It seems important to emphasize that ultra-thin models are also pervasive in music videos, notwithstanding the use of fuller-bodied models in videos usually aimed at male audiences, and to include them specifically in interventions designed to make adolescent girls more critical of the unhealthy and unattainable body ideals presented by glamorized media models (see Stice & Shaw, 2004, for a meta-analytic review of eating disorder prevention programs).

In terms of extending the present research to different populations, two directions seem particularly important. First, we need to examine whether the same findings emerge amongst girls who are in the earlier stages of adolescence, i.e. among 12–15-year-olds. The impact of thin models in music videos on pre-adolescent girls' body image may also warrant further investigation. Second, male models in music videos may also have a negative impact on male adolescents. Tiggemann (2005) found a correlation between number of hours spent watching music videos and body dissatisfaction (and drive for muscularity) in adolescent boys. However, to date, no attempt at studying this experimentally has been made, thus it would be useful to replicate the present study, investigating the effects of music videos on adolescent boys of different age groups.

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