The effects of TV commercials using less thin models on young women's mood, body image and actual food intake

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ARTICLE INFO

Article history:
Received 13 February 2009
Received in revised form 15 July 2009
Accepted 15 July 2009

Keywords:
TV commercials
Less thin models
Thin models
Mood
Body focused anxiety
Food intake

ABSTRACT

This study experimentally tested the effects of exposure to television commercials using less thin models on mood, body focused anxiety and food intake, as compared to the effects of commercials using thin models. In a naturalistic setting, 110 young women were exposed to a neutral movie, interrupted by two commercial breaks. The commercial breaks contained real commercials using either less thin (n = 39) or thin models (n = 39), or neutral commercials (n = 39). During watching television, participants could freely eat snack food. Further, their mood and body focused anxiety was assessed. ANOVAs revealed no effects on body focused anxiety, but women reported a more negative mood and ate less after exposure to commercials using less thin models than after exposure to commercials using thin models. These results imply that using less thin models in commercials explicitly referring to the thin ideal does not make women feel better.

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Introduction

Exposure to thin ideal representations in the media is often found to be related to body image and eating disturbance in women (see for reviews Grabe, Ward, & Hyde, 2008; Groesz, Levine, & Murken, 2002). The media contributes to the current thin beauty ideal by providing examples of ‘attractive’ females (i.e., models, actresses, pop stars), that are used as a reference norm by young women. Most studies on this topic have focused on magazine influences and in general these mostly experimental studies have found that women felt worse about their own body after exposure to thin ideal images than when exposed to average sized models or neutral images (e.g., Halliwell & Dittmar, 2005; Posavac, Posavac, & Posavac, 1998; Stice & Shaw, 1994). Previously, it has been found that the influence of television watching is different from the influence of magazine reading on body image (Tiggemann, 2003). The influence of average size models on body image as compared to the influence of thin models was only studied using still magazine images. It is important to examine this relationship using television commercials, because people watch a lot of television these days. Television commercials differ from magazine advertisements is several ways, i.e., use of motion pictures and storyline, so the effects of television commercial exposure on body image might differ from the effects of magazine exposure. Although women are probably more frequently exposed to television than to magazines, very few studies examined the effects of exposure to televised thin ideals on body image or eating disturbance. Most of these studies used correlational designs (e.g., Bissell & Zhou, 2004; Schooler, Ward, Merriwether, & Caruthers, 2004; Tiggemann & Pickering, 1996), and have found that frequent exposure to (thin ideal) television was related to higher body dissatisfaction. Even more influential might be television commercials promoting beauty products and/or using thin models. Advertising actually aims at convincing women to use the products promoted by making a concrete link between the thin ideal and means to achieve that for women themselves. In the present study, we tested the effects of exposure to television commercials using thin models on mood, body focused anxiety and food intake, and compared these effects with the effects of exposure to commercials for the same products but using less thin models.

Previously, two experimental studies examined the effects of commercials featuring thin ideal models on young women’s body image (Cattarin, Thompson, Thomas, & Williams, 2000; Heineberg & Thompson, 1995). In both studies female participants in small groups were exposed to either a compilation of thin ideal commercials or a compilation of neutral commercials. In general, the results showed that women who were already preoccupied with their body, through high internalization of the thin ideal or high body image disturbance had higher body dissatisfaction scores after being exposed to the thin ideal commercials. In...
addition, some studies used actual food intake as outcome measure instead of body dissatisfaction. Strauss, Doyle, and Kreipe (1994) showed women a sad movie interrupted by commercials with thin women and diet-related products or neutral commercials. During watching, the participants could freely eat chocolate-coated peanuts. They were interested in the effects of restrained eating (deliberately eating less in order to maintain or lose weight) on the relation between thin ideal exposure and food intake. The results showed that high restrained eaters exposed to the thin ideal commercials ate much more than restrained eaters exposed to neutral commercials or unrestrained eaters in both conditions. These results were replicated by Warren, Strauss, Taska, and Sullivan (2005). Further, Seddon and Berry (1996) found that high restrained eaters ate more during a taste test following exposure to thin ideal commercials as compared to unrestrained eaters. So, restrained eaters seem to be disinhibited by commercials with thin models and diet-related products.

However, opposite results were found by Anschutz, Van Strien, and Engels (2008). In that study, a semi-naturalistic setting was used, to increase the ecological validity. Participants were exposed to a movie interrupted by either commercials with slim models and diet-related products or neutral commercials, and meanwhile they could freely eat from crisps and chocolate-coated peanuts. The results showed that restrained eaters ate less when exposed to the commercials with slim models and diet-related products than when exposed to neutral commercials, whereas unrestrained eaters ate slightly more when exposed to commercials with slim models and diet-related products than when exposed to neutral commercials. The difference in results between this study and the previous studies finding disinhibition in restrained eaters after exposure to thin ideal commercials might be explained by a difference in the measurement of restraint. In the study by Anschutz, Van Strien, et al. (2008), the Dutch Eating Behavior Questionnaire (Van Strien, Frijters, Bergers, & Defares, 1986) was used to measure restrained eating, whereas all three above-mentioned studies used the Restrained Scale that is known for selecting restrained eaters with a tendency to overeat (see Stice, Ozer, & Kees, 1997; Van Strien, Herman, Engels, Larsen, & Van Leeuwe, 2007). The findings of the study by Anschutz, Van Strien, et al. (2008) indicate that restrained eaters might be inspired by thin ideal commercials to stick to their diets. Self-enhancing effects (feeling better about oneself) of exposure to thin ideal images were found in restrained eaters in two studies (Joshi, Herman, & Polivy, 2004; Mills, Polivy, Herman, & Tiggemann, 2002). The authors suggested that restrained eaters are susceptible to a ‘thinness fantasy’, triggered by exposure to thin ideal images, in which they believe to be thinner than they actually are. Still, it remains unclear whether this so-called ‘inspiration’ in restrained eaters leads to restriction of food intake (Anschutz, Van Strien, et al. (2008)) or overeating (Mills et al., 2002), so further examination is needed. In sum, the results of studies testing the effects of exposure to thin ideal commercials on food intake show that restrained eating is an important moderator in the relation between thin ideal media exposure and food intake. However, the results on food intake are somewhat conflicting, so further examination is needed.

Previous studies that tested the effects of thin ideal television commercials on body image and food intake always compared these effects with the effects of neutral commercials (e.g., promoting a car or cleaning product). So, no information is available on the effects of television commercials featuring less thin models as compared to the effects of commercials featuring thin models. Nowadays, in Western society’s one beauty products brand (Dove©) is explicitly using models with ‘realistic’ bodies, as a response to the current thin beauty ideal women are bombarded with by the media these days. However, it has never been tested whether these commercials, using ‘realistic’ models and putting the emphasis on thin ideal media negatively influencing women’s body image, are actually related to improved mood or body image and lower eating disturbance in women.

The main research question of the present study was to test the effects of exposure to television commercials for beauty products using less thin models (Dove©) on mood, body focused anxiety and actual food intake, as compared to the effects of exposure to commercials for similar types of beauty products using thin models (Nivea©). An additional research question of the current study was whether restraint would moderate the relation between television commercial exposure and mood, body focused anxiety or food intake. In line with the ‘inspiration theory’, it was expected that restrained eaters would show a more positive mood and lower body focused anxiety when exposed to commercials using thin models than when exposed to commercials using less thin models or neutral commercials. In contrast, unrestrained eaters were not expected to be affected by the different types of commercials. Since previous results regarding food intake are highly conflicting, no specific hypotheses with respect to the effects of exposure to the commercials on actual food intake were formulated. Apart from restrained eating, thin ideal internalization was included as a possible moderator between media exposure and mood, body dissatisfaction or food intake. Because previous studies found stronger effects of thin ideal media on body image in women with high internalization of the thin ideal (e.g., Cattarin et al., 2000; Dittmar & Howard, 2004; Halliwell & Dittmar, 2004; Heinberg & Thompson, 1995; Levine & Murnen, 2009) it was expected that women high in thin ideal internalization would feel worse and have higher body dissatisfaction after exposure to commercials using thin models compared to women low in thin ideal internalization. No specific hypotheses with respect to food intake were formulated regarding thin ideal internalization.

Method

Participants

The sample consisted of 110 female students from the Radboud University Nijmegen. They participated in exchange for money or course credits. The mean age of the participants was 20.05 years (SD = 1.93) and their average body mass index (BMI = kg weight/m2) was 22.39 (SD = 2.83). Immediately after watching the television clip, all participants were asked what they thought the study purpose was. Seven participants turned out to be right about the topic of the study (influence of the commercials on body image and/or eating behavior and/or mood), so we concluded that our participants in general were naive to the purpose of the study. Exclusion of the seven participants who were right about the study purpose did not at all change our findings. Therefore, the total sample was used in our final analyses.

Procedure

All participants were tested individually. The participants were told that the study investigated television viewing behavior at home in general. We tried to create a setting as naturalistic as possible, which resembled a home cinema. Participants could sit on a comfortable couch and the movie, interrupted by commercial breaks, was projected on the wall, using a good sound system. Further, the room was decorated with accessories like plants, paint and lamps (cf. Anschutz, Engels, Becker, & Van Strien, 2008; Anschutz, Van Strien, et al., 2008). First, the participants filled out a questionnaire assessing their pre-test mood. Next, they were told that they would watch a movie-clip for about 30 min that would be interrupted by two commercial breaks. They would not need to try to remember anything in particular, but just had to
act like they were watching television at home. A side table with two pre-weighted bowls with crisps and M&Ms and a glass of water stood in front of the participants. They were told that they could eat whatever they liked from the crisps and M&Ms while watching the movie. Subsequently, the experimenter started the movie, turned down the lights and left the room.

The movie used for the movie-clip, “Travelling Birds”, was chosen for its neutral considered content. The movie was about migratory birds and was relatively unknown to Dutch university students (see also Anschutz, Van Strien, et al., 2008). After 5 and 20 min respectively the movie was interrupted by a commercial break, containing one target commercial and four neutral commercials (e.g., promoting a cleaning product or a home cinema set). The neutral commercials did not contain any women, but they did contain some (older) men in two commercials that did not play a prominent role in the commercial but were present on the background. The target commercials were promoting Dove products in one condition, and promoting Nivea products in the other condition. The models used in these commercials were average sized or slightly oversized in the Dove condition, but very thin in the Nivea condition. The commercials were matched in products and length over both conditions; the first commercial of Dove and the matching Nivea commercial promoted shower gel, and second commercial of Dove and the matching Nivea commercial promoted tanning lotion. The accompanying message of the matching product commercials did not differ much between the Dove and Nivea condition. The shower gel focuses in both conditions on ‘freshness’ and the tanning lotion on ‘summer’ and ‘appearance’. However, the Dove commercials refer to using ‘real women’ and focus more explicitly on the thin ideal than the Nivea commercials. To get information about baseline scores on mood, body focused anxiety and food intake, a neutral control condition was included, in which the movie was interrupted by two commercial breaks that consisted solely of five neutral commercials. Hence, the participants were randomly divided over three conditions; the Dove condition, the Nivea condition, and the neutral control condition.

After watching the movie, the participants were asked to complete questionnaires about their mood, body focused anxiety and eating behavior. Next, their weight and height was measured. Debriefing took place after the data collection had been completed.

Measures

**Attitudes towards the movie**

To investigate the attitudes of the participants towards the movie, we presented them with four statements about the movie. They were asked to indicate on a 5-point Likert scale (ranging from 1 ‘totally not agree’ to 5 ‘totally agree’) to what extent they considered the movie interesting, boring, bad or nice. Cronbach’s α was .86.

**Commercial recall**

Participants were asked to write down as many commercials as they remembered. All correctly remembered commercials (brand and product name) were summed to get a recall score for each participant. In both experimental conditions recall of the target commercials was distinguished from the neutral (filler) commercials, to check whether the target commercials were more often recalled than the neutral commercials (cf. Anschutz, Engels, et al., 2008).

**Commercial liking**

For each remembered commercial participants could indicate how much they liked that specific commercial, which enabled us to assess what explicit attitudes the participants had towards the commercials they remembered. They could rate the commercials on a 5-point Likert scale ranging from 1 ‘totally did not like the commercial’ to 5 ‘really like the commercial very much.’ Again, liking of the target commercials was distinguished from liking of the neutral commercials.

**Hunger**

Individual differences in hunger might influence food intake (e.g., Polivy, Coleman, & Herman, 2005; Urbszat, Herman, & Polivy, 2002). Therefore, we controlled for individual differences in hunger by presenting the participants after watching television with a 14-cm VAS to establish the extent to which they had felt hungry or satisfied before they entered the experiment ranging from ‘very hungry’ to ‘not hungry at all’ (cf. Anschutz, Engels, et al., 2008; Anschutz, Van Strien, et al., 2008).

**Restrained eating**

The restraint subscale of the Dutch Eating Behaviour Questionnaire (DEBQ; Van Strien et al., 1986) was used to measure restrained eating. This subscale includes 10 items (e.g., ‘Do you deliberately eat less in order not to become heavier?’), with response categories ranging from 1 ‘Never’ to 5 ‘Very often.’ Cronbach’s α coefficient was .94. By a median split, participants were divided into a low restraint and a high restraint group.

**Thin ideal internalization**

The Sociocultural Attitudes Towards Appearance Questionnaire-III (SATAQ-3; Thompson, Van den Berg, Roehrig, Guarda, & Heinberg, 2004) was used to assess thin ideal internalization. The internalization subscale of this questionnaire consists of nine statements. An example of a statement is: ‘I would like my body to look like the people who are in the movies.’ Response options ranged from 1 (“totally disagree”) to 5 (“totally agree”). Cronbach’s α was .92. By a median split, participants were divided in two groups scoring either low or high on thin ideal internalization.

**Mood**

To investigate whether exposure to the commercials caused any differential mood states of the participants, we asked the participants immediately before and after watching the movie to indicate on a Visual Analogue Scales (VAS; 140 mm) to what extent they felt ‘sad’ or ‘happy’ at that moment, with the scale ranging from ‘Not at all’ to ‘Very much’. Good convergence of VAS assessing mood was found with investigations of similar constructs (e.g., the PANAS scales) (Heinberg & Thompson, 1995; Thompson, 2004).

**Body focused anxiety**

To assess participants’ state body focused anxiety we used the Physical Appearance State and Trait Anxiety Scale (PASTAS; Reed, Thompson, Brannick, & Sacco, 1991). Because we were only interested in the weight related items and not in non-weight-related body parts, we computed a weight related subscale of seven items; the extent to which I look overweight, thighs, buttocks, hips, stomach, legs and waist (see also Anschutz, Van Strien, Becker, & Engels, 2009). Participants indicated how anxious they felt about the different body parts at that moment, with response categories ranging from 1 ‘not at all’ to 5 ‘very much.’ Cronbach’s α coefficient was .90.

**Food intake**

A total food intake score (in kcal) was computed for every participant, by measuring the total amount of crisps and M&Ms the participants consumed while watching television. The bowls with crisps and M&Ms were pre- and post-weighed, using a professional balance (Kern 200). We used total food intake in kilocalories as dependent variable, since crisps and M&Ms differ in weight and
caloric value and therefore summing up the grams of crisps and M&Ms eaten would not make sense (with 36% of the participants eating both crisps and M&Ms).

**Strategy for analyses**

First, means and standard deviations of all variables will be given, sorted by condition. Using ANOVAs we checked whether there were any differences between the commercial conditions on the general attitudes towards the movie, commercial recall, or commercial liking. Next, Pearson’s correlations between all variables were calculated.

To test the effects of commercial condition (Dove\(^{a}\), Nivea\(^{a}\), or neutral) on mood, body focused anxiety and food intake we used analyses of variance. The first analysis tested the main effect of commercial condition on sadness, controlling for pre-test sadness using an ANCOVA. Regarding happiness the same analysis was conducted, but with happiness as dependent variable and with pre-test happiness scores included as a covariate. To test the effect of commercial condition on body focused anxiety an analysis of variance was conducted with commercial condition as independent variable and body focused anxiety as dependent variable. In this analysis we controlled for BMI, since BMI correlated significantly with body focused anxiety. To test the effects of commercial condition on food intake, we performed an analysis of variance with food intake as dependent variable and commercial condition as independent variable. We did not control for BMI and state of hunger, since both variables appeared to be uncorrelated to food intake. In four additional analyses we tested the interaction effects of commercial condition and restraint on mood (sadness and happiness), body focused anxiety and food intake. Furthermore, four additional analyses tested the moderating effect of thin ideal internalization in the relation between commercials exposure and mood, body focused anxiety and food intake.

**Results**

**Descriptives**

Table 1 shows the means and standard deviations of all variables. Randomization seemed successful, since no differences were found on BMI (F(2, 109) = 1.55, ns), hunger (F(2, 109) = 0.20, ns) and restraint scores (F(2, 108) = 0.07, ns) of the participants between the three commercials conditions. In addition, no differences were found between the different commercial conditions on liking of the movie (F(2, 109) = 0.98, ns) and liking of the remembered neutral commercials (F(2, 97) = 1.24, ns). However, a significant difference was found between conditions on the overall number of remembered commercials (F(2, 107) = 6.06, p < .01). Post-hoc testing (Bonferroni) revealed that participants in the Dove\(^{a}\) condition remembered significantly more commercials than participants in the neutral commercial condition (p < .01), whereas no significant differences were found between the Dove\(^{a}\) and Nivea\(^{a}\) condition or the Nivea\(^{a}\) and neutral commercial condition on commercial recall. Further, participants in the Dove\(^{a}\) condition reported higher liking of the remembered target commercials than participants in the Nivea\(^{a}\) condition, F(1, 59) = 5.69, p < .05. Pearson’s correlations between all variables are shown in Table 2.

**Mood**

**Sadness**

The results showed that pre-test sadness scores were positively related to post-test sadness, F(1, 106) = 178.33,
p < .001. In addition, commercial condition had a significant main effect on post-test sadness while controlling for pre-test sadness, F(2, 106) = 4.15, p = .018. Post-hoc comparisons (Bonferroni) revealed that participants in the Dove® condition felt significantly sadder than participants in the Nivea® condition after watching television (p = .017). No significant differences were found on sadness between the Dove® condition and the neutral condition or between the Nivea® condition and the neutral commercial condition.

**Happiness**

The results showed that pre-test happiness scores were positively related to post-test happiness, F(1, 106) = 45.51, p < .001. No significant main effect of commercial condition was found on happiness after watching television, F(2, 106) = 0.34, ns, indicating that there were no differences between participants in the three commercial conditions on their happiness scores after watching television.

**Body focused anxiety**

To test the main effect of commercial condition on body focused anxiety an analysis of variance was conducted, controlling for BMI. The results showed that BMI had a positive main effect on body focused anxiety, F(1, 103) = 15.48, p < .001. The higher the BMI of the participant, the higher her body focused anxiety was. No main effects were found for commercial condition on body focused anxiety, F(2, 103) = 0.82, ns.

**Food intake**

The results of the analysis of variance with food intake as dependent variable showed that commercial condition had a significant main effect on food intake F(2, 107) = 3.40, p < .05. Post-hoc comparisons (Bonferroni) revealed that participants in the Dove® condition ate significantly less than participants in the Nivea® condition (p < .05), whereas no significant differences were found between the neutral commercial condition and the Dove® condition or the Nivea® condition on food intake.

It was checked whether sadness mediated the relation between commercial exposure and food intake, but this appeared not to be the case. This suggests that the effects of commercials exposure on mood and food intake comprise different processes.

**Moderating variables**

It was tested whether restraint or thin ideal internalization moderated the relation between commercial condition and sadness, happiness, body focused anxiety or food intake, but no significant interaction effects were found between commercial condition and restraint or thin ideal internalization on all dependent variables.

**Discussion**

The aim of the present study was to test the effects of commercials using less thin models on mood, body focused anxiety, and food intake as compared to the effects of commercials using thin models. The results showed that although no differences were found on body focused anxiety, participants who were exposed to the commercials using less thin models felt sadder than participants who were exposed to the commercials using thin models. Furthermore, when exposed to commercials using less thin models the participants ate less than when exposed to commercials using thin models. The effects of these commercials on mood, body focused anxiety or food intake were not found to be moderated by restrained eating or thin ideal internalization.

Since studies examining magazine exposure found that women felt better about their own body after exposure to less thin models than when exposed to thin models (e.g., Dittmar, Halliwell, & Stirling, 2009; Dittmar & Howard, 2004; Halliwell & Dittmar, 2004; Wilcox & Laird, 2000), it was expected that exposure to television commercials using less thin models would have the same effect on women's body image. Nevertheless, the results of the present study show that body focused anxiety scores did not differ between women who were exposed to commercials using less thin models and women who were exposed to commercials using thin models. This suggests that the commercials using ‘realistic’ models at least do not have the positive effect on body image they were expected and pretended to have. Perhaps, television commercial exposure differs from magazine exposure regarding the effects on body image (see also Tiggemann, 2003). For example, the storyline of the television commercials might have distracted the women from actual perception of the body sizes of the models, which kept these commercials from influencing body focused anxiety. Previous studies using still images often exposed the participants to the pictures solely without embedding them into a magazine. This might explain the differences between their findings and our findings since we embedded the television commercials into a movie interrupted by a commercial break, which might be more naturalistic but at the same time the context might have distracted participants from the body figures of the models in our target commercials. In line with this, it is possible that television commercial exposure does not affect body focused anxiety on the short-term, although mood and food intake (behavior) were affected immediately. It could be that they contribute to thin ideal norms over time, without making women feel better or worse about themselves on the short-term. Future studies could experimentally test the differences between the processes through which magazine and television exposure affect body image, to further examine whether and how they differ from each other.

Women exposed to these commercials felt sadder, and ate less than women exposed to commercials using thin models. A possible explanation for the effect found on sad mood might be that women are reminded of the thin beauty ideal by the Dove® commercials, since these commercials explicitly refer to the beauty ideal. In contrast, the Nivea® commercials mainly focus on the products advantages and not at all on the model’s body figure. In that case, heightened ‘awareness’ of the beauty ideal and confrontation with the difficulty to live up to these beauty ideal standards for the ‘average’ women might have caused the participants in the Dove® condition to have a more negative mood state and eat less. The explicit emphasis that is placed on the use of ‘realistic models’, which is probably a marketing strategy used to facilitate women viewers to identify with the models in these commercials, might also have activated higher self-awareness regarding their body figure. Recently, Dalley and Buunk (2009) found that when women perceived higher similarity to a prototype of a ‘fat’ woman, they were more likely to engage in dieting behavior when they had a more negative attitude towards that prototype they felt similar to. They suggested that dieting behavior might primarily be motivated by a fear of being or becoming fat than by a desire to be thin. Although the Dove® models were obviously not really ‘fat’, the mechanism they suggested might explain our findings as well. Participants in the Dove® condition might have identified with the models in these commercials and these models might have triggered a fear of becoming fat in the participants, which was associated with a more negative mood state and lower food intake as compared to participants who were exposed to the commercials using thin models.

In contrast to women exposed to the Dove® commercials, women exposed to the Nivea® commercials felt less sad and ate
more snack food. Perhaps the participants were inspired by the thin models, and engaged in a ‘thinness fantasy’ in which they felt thinner themselves and therefore ate more. We should stress that although ‘inspiration’ by thin models sounds rather positive, it might be a negative consequence of internalization of the thin ideal in Western women. Previously, Mills et al. (2002) found an inspiration effect in restrained eaters after exposure to thin model images, and also found restrained eaters eating more after being ‘inspired.’ However, it remains unclear whether women just feel less sad or are indeed inspired by the thin models (in that they think of themselves as being thinner than they actually are) and, in addition, why they would then eat more after being inspired. Future studies should further explore the ‘inspiration theory’ of exposure to thin media models, as well as the above-mentioned ‘fear of fat theory’ of exposure to less thin media models.

In the present study, we did not find differences between restrained and unrestrained eaters or women high or low on thin ideal internalization in the relation between commercial condition and mood or food intake. This might be explained by the fact that the commercials that were used in this study targeted all young women. Previous studies finding a moderating effect of restraint used commercials promoting diet-related products as well as obviously target restrained eaters specifically (Anschutz, Van Strien, et al., 2008; Seddon & Berry, 1986; Strauss et al., 1994; Warren et al., 2005). The results of the present study suggest that television commercials promoting common beauty products are affecting young women in general and might not differentially affect women that are assumed to be more pre-occupied with their body. This might also explain why the effects of the commercials did not differ between women high or low on thin ideal internalization, although Cattarin et al. (2000) found a moderating effect of internalization on body dissatisfaction after exposure to appearance related commercials. In that study participants were exposed to a tape that contained only appearance related commercials or non-appearance related commercials. Perhaps, our manipulation was more subtle because great effort was taken to create stimuli as naturalistic as possible. Therefore, the commercials used in the present study might not have triggered women with high thin ideal internalization in particular to feel worse after the commercial exposure. It is important to further explore the role of possible moderators in the relation between media exposure and body image to investigate underlying mechanisms of media effects.

Remarkably, the commercials using less thin models were rated more positively by the participants than both the commercials using thin models and the neutral commercials. This explicit positive judgement might be due to the highly sympathetic character of the Dove® commercials. However, indirectly raising attention of women to the beauty ideal by using ‘realistic’ models and still subsequently offering products to improve appearance (i.e., firming gel) seems more likely to be just a smart selling strategy than an honest attempt to decrease body image concerns in women. Especially when taking into account that the brand owner (Unilever) of Dove® products also owns a lot of other beauty product and cosmetics brands that still use very thin models (e.g., Axe [Lynx], Rexona). Since the explicit liking of the commercials using less thin women seems to contradict the effects we found on mood, it would be interesting to examine the implicit evaluations of the Dove® commercials in future studies. For example, by using an implicit association task (IAT; see also Perkins, Forehand, Greenwald, & Maisen, 2008). This task assesses implicitly whether people have positive or negative associations with certain concepts and could be used to measure the implicit associations that women have with the Dove® commercials.

Some limitations of the present study should be mentioned. First, the measure we used to assess body focused anxiety might not be adequate to measure state body dissatisfaction, because it might have been sensitive to demand characteristics. A suggestion for future studies could be to embed body dissatisfaction questions between filler questions to disguise the focus on body image. However, future studies could benefit from developing and employing less explicit body dissatisfaction measures. For example, a suggestion could be to measure the self-perception of the participants, by confronting them with several morphed photos of their own body and asking them to indicate which is their own and ideal body. The advantage of this method is that it measures body dissatisfaction (discrepancy perceived own and ideal body) and self-perception (discrepancy perceived own and actual body). Additionally, this method enables to actually investigate whether the effects of commercials using thin or less thin models are due to women desiring a thinner body or women perceiving themselves as being thinner than they actually are in response to commercials using thin or less thin models. This would be very interesting when further examining the ‘fear of fat’ or ‘inspiration’ theory. Another limitation might be that we compared the effects of the Dove® commercials to the effects of commercials of one specific brand using thin models (Nivea®). Since a lot of different brands use thin models, it might be that if we had chosen another brand, the effects of that brand would be different. However, we tried to match both brands on the kind and variety of products, the target group of the commercials, and the familiarity with the women in our sample, as much as possible. In addition, specific characteristics of the Dove® commercials might also have played a role in our findings (i.e., the explicit focus on the use of realistic models). Therefore, further research is needed to establish whether it was the use of less thin models that affected the participant’s mood and food intake or whether the explicit reference to the thin ideal played an important role as well in this relation. In the present study, the participant’s perception of the body size and attractiveness of the models in the commercials were not measured, so unfortunately we do not have any data on whether the perceived body size and attractiveness of the models differed between the experimental conditions. Therefore, it would be a great suggestion for future research to include measurement of the body size and perceived attractiveness of the models. Another limitation of the present study might have been using restrained eating as an indicator for body preoccupation/concerns. Finally, the long-term effects of exposure to commercials explicitly using less thin models are still unknown. However, when these commercials have an effect on mood and food intake in such a short period, the effects might be even stronger over time.

The present study was the first study that examining the effects of commercials using less thin models on mood, body image and food intake. In sum, the results of the present study show that although it is generally assumed that using less thin models has a positive effect on women’s body image and eating disturbance, this might not necessarily be the case. Our study is the first to show that exposure to commercials using less thin models can affect mood and food intake in a naturalistic setting, regardless of restraint status or thin ideal internalization. Further, the present study yields some interesting points of departure for future research. Future studies are required to further examine the underlying mechanisms of the effects of exposure to media models on young women, since the processes through which exposure to media models influence body image and eating behaviors are still largely unknown.

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