Introduction

Ample research showed that exposure to mass media affects the development of body image and eating behavior in children already at a very young age (e.g., Harrison & Hefner, 2006; McCabe & Ricciardelli, 2005; Ricciardelli & McCabe, 2001). Especially young girls are found to be susceptible to thin ideal mass media negatively affecting body satisfaction and promoting disturbed eating behaviors such as dieting (Clark & Tiggemann, 2008; Moriarty & Harrison, 2008). This is worrisome because body dissatisfaction and dieting are considered core characteristics of eating disorders, such as bulimia and anorexia nervosa (Garfinkel, 2002; Hill, 1993). Furthermore, body dissatisfaction predicted depressive symptoms in early adolescent girls (Rierdan & Koff, 1997). The present study further examined the effects of exposure to thin ideal media by experimentally testing the direct effects of watching thin ideal television on body dissatisfaction in young girls (9–12 years old).

Watching television comprises a large part of children's pastime. Recent numbers show that American children, aged between 2 and 11 years, watch television on average 3 h and 37 min a day (Nielsen Media Research, 2009). In the Netherlands, as many as 17% of the children between 7 and 12 years of age spend more than 2 h a day watching television (Van Strien, Van Niekerk, & Ouwens, 2009). Media aimed at young children contain many thin ideal messages, especially in the form of positive attributions towards thinness and beauty and negative attributions towards overweight and unattractiveness (Herbozo, Tantleff-Dunn, Gokee-Larose, & Thompson, 2004; Klein & Shiffman, 2005, 2006). However, no direct influence of exposure to appearance-related media on body image was found in very young girls (3–6 years old) in a recent study (Hayes & Tantleff-Dunn, 2010). The authors suggest that the effects of exposure to thin ideal media may become more profound after the age of six.

Besides media aiming at children (i.e., cartoons), young children watch adult targeted television as well (Barradas, Fulton, Blanck, & Huhman, 2007; Paik, 2001; Roberts, Foehr, Rideout, & Brody, 1999). After the age of nine, children become primarily interested in adult targeted media. They learn about social norms, relations, and interactions when watching these programs (Rosengren & Windahl, 1989; Valkenburg & Cantor, 2001). Through their observations of parents and other adults, children receive information about how their bodies should look, how others perceive their bodies, and how they should manage the appearance of their bodies (Lerner & Jovanovic, 1990). This suggests that watching adult television contributes to the sociocognitive development of young children and might perhaps even influence their attitudes and behaviors. Watching alcohol and smoking portrayals in adult movies in childhood was found to be related to alcohol use and smoking initiation.
in children and young adolescents (e.g., Dalton et al., 2003, 2005; Hanewinkel & Sargent, 2009), which supports this assumption. Many adult television programs contain strong thin ideal cues that may affect young girls’ body image. When watching these programs, they might feel unable to live up to the unrealistic thinness standards and consequently feel dissatisfied with their own bodies and eventually even attempt to lose weight (McCabe & Ricciardelli, 2005). Young girls indeed indicated the media as a more important source of information about dieting (Lawrie, Sullivan, Davies, & Hill, 2007; Schur, Sanders, & Steiner, 2000). So, young children watch adult television and may be influenced by what they see because they absorb the ‘social’ information provided and perhaps even translate this information into attitudes or behaviors. In this regard, it is important to establish the effects of the numerous thin ideal cues that are present in adult television programs on young girls’ body image.

A couple of cross-sectional studies examined the relations between television exposure and young girls’ body image. Dohnt and Tiggemann (2006a) found a relation between watching music television and dieting awareness in 5–8 year-old girls, but watching music television was not related to body dissatisfaction in this age group. Further, they found that watching appearance related television was related to lower appearance satisfaction in young girls one year later (Dohnt & Tiggemann, 2006b). Additionally, it was found that higher levels of watching television in general predicted thinner future ideal body figures but not thinner current ideal body figures ideals in 8–9 year-old girls over time (Harrison & Hefner, 2006). Clark and Tiggemann (2006, 2007) found that watching appearance-focused television (adult-targeted) was related to higher body dissatisfaction in pre-adolescent girls (9–12 years old), directly and indirectly through appearance related conversations with their peers. Further, it was found that watching soaps and music television was indirectly related to body dissatisfaction through thin ideal internalization in 7–9 year-old girls (Anschutz, Engels, Van Leeuwe, & Van Strien, 2009). In sum, there is preliminary evidence revealing that thin ideal television exposure is related to body dissatisfaction in young girls.

The present study investigated the direct effects of exposure to thin ideal television, taking into account some shortcomings of the existing literature. First, in the literature we found no previous studies that experimentally tested the direct effects of watching adult targeted thin ideal focused television on body image in young children. In adults and adolescents, experimental studies showed that exposure to thin ideal focused television was directly related to higher body dissatisfaction (Bell, Lawton, & Dittmar, 2007; Hargreaves & Tiggemann, 2002; Want, Vickers, & Amos, 2009). A limitation of the correlational designs used in previous studies focusing on young girls is that incorrect causal conclusions might be drawn because girls who experience higher body dissatisfaction might be more interested in thin ideal media and therefore watch more thin ideal television. Therefore, it is important to examine whether watching thin ideal focused television directly affects young girls’ body image as well. Second, most previous studies did not differentiate between different types of television programs, although thin ideal focused television programs highly differ in the extent to which they refer to the thin ideal. For example, some television shows contain thin ideal characters but do not directly emphasize the thin ideal (i.e., soap opera’s or movies). However, other television shows explicitly focus on the thin ideal (i.e., America’s Next Top Model or Extreme Make-Over). From an intervention perspective, it is important to establish which types of television shows affect body image in young girls. Television shows with an explicit emphasis on the thin ideal might be more likely to directly affect young girls’ body image than solely exposure to thin media models. This assumption was tested in the present study, by comparing the effects of a thin ideal focused program with the effects of a popular soap opera that contained thin actresses, but had no explicit focus on the thin ideal.

Previously, it was found that maternal influences (weight concern and encouragement to be thin) were stronger for children in late childhood than children in middle childhood (e.g., Anschutz, Kanters, Van Strien, Vermulst, & Engels, 2009). In this phase, children develop a broader environmental orientation (e.g., Demetriou, 2003) and become more aware of social and cultural norms. They learn that physical appearance plays an important role in interpersonal relations and might even elicit preferential treatment (Lerner & Lerner, 1977; Ramsey & Langlois, 2002; Vannatta, Gartstein, Zeller, & Noll, 2009). In addition, ideal body figures were found to become thinner as age increased in childhood (Brodie, Bagley, & Slade, 1994; Gardner, Sorter, & Friedman, 1997). This might imply that children in late childhood, when they approach adolescence, become more vulnerable to the effects of exposure to thin ideal media on body image. Since not much is known yet about the development of thin ideal media influence in young children, it is important to test age differences when investigating media influence.

The present study investigated the direct effects of watching thin ideal television on young girls’ (aged between 9 and 12 years old) body dissatisfaction, using a within-subject design. The effects of watching a television show that explicitly focuses on the thin ideal and a television show that contains thin actresses but does not emphasize the thin ideal were compared to the effects of watching a neutral nature documentary. It was expected that especially exposure to the explicit thin ideal television show is related to higher body dissatisfaction. Furthermore, the effects were expected to be stronger in the older pre-adolescent group (11–12 years old).

Method

Participants

The sample consisted of 60 girls from Grades 4 to 6 of three Dutch primary schools in the central, eastern and southern part of the country. In Grade 4 (n = 21) the mean age (as measured at the first session) of the children was 9.19 years (SD = 0.60). In Grade 5 (n = 22), the children had a mean age of 10.05 years (SD = 0.21). In Grade 6 (n = 17), the children had a mean age of 11.18 years (SD = 0.29).

Design

A within-subject design was used in which the girls were tested on three different days. In every session, they watched a 20-min movie clip (random order) that was either explicitly focused on the thin ideal, contained thin models but no explicit reference to the thin ideal or was neutral in content. After every session, the girls’ body dissatisfaction was assessed. Power calculations revealed that a minimum of 52 participants per cell is needed in an ANOVA design with 3 three different experimental conditions for 0.80 power to detect a medium effect size (Cohen, 1992).

Procedure

Protocols of the study were approved by the ethics committee of the Faculty of Social Sciences, Radboud University Nijmegen. Eight schools were approached and three schools agreed to participate in the study. After the schools agreed, parents received a letter with detailed information about the study and were asked for consent for their daughter to participate (active informed consent). Parents were explicitly asked not to discuss the information about the study with their children, to keep the girls naïve to the study purpose.
All girls were individually tested during regular school hours. The experiment took place in an experimental setting that was created at each school. A separate room was used to minimize distraction. There was a comfortable chair the children could sit in when watching television and they had a side table next to them with a glass of water they could drink from. The room was decorated with plants and paintings. All three sessions started with watching a 20-min television clip. The girls were told to watch the television clip while acting like they were at home and that they would be asked to answer some questions afterwards. One television clip was taken from the television show Holland’s Next Top Model, which is the Dutch version of America’s Next Top Model. The clip was taken from the first episode of a new season, in which the auditions for the program are shown. It involved a catwalk at the beach on which the models had to walk wearing bathing clothes and an interview with the four judges of the television program. Emphasis is placed on the thin ideal by the judges making comments on the body figures of the candidates and thereby often referring to extreme thinness as a positive feature and less thin as being undesirable. A second television clip was taken from a popular Dutch soap opera (‘Goede Tijden Slechte Tijden’). In this clip, no explicit emphasis was placed on the thin ideal, but all actresses in the soap opera are thin. A third clip was taken from a movie about migratory birds (Traveling Birds, see also Anschutz, Van Strien, & Engels, 2008) and was considered to be neutral in emotional content. This television clip contained no humans so absolutely no thin ideal cues. Great care was taken to remove any possible frightening, shocking or inappropriate scenes from all three television clips. The girls watched the television clips in random order. Each time after watching the television clip, they were asked to complete questionnaires about their attitudes towards the television clip and their state body dissatisfaction. A research assistant read the questions aloud and clarified them when needed. After the first session, the girls’ height and weight was measured without wearing shoes. Time between the three sessions was mostly one but sometimes two weeks (as holidays or school matters occurred in between) and the girls were always tested at the same day of the week and the same time of the day.

**Measures**

**Body mass index**
For each girl, a BMI score (weight (kg)/height$^2$ (m)) was calculated. International standards were used to classify children into four BMI categories: (1) underweight, (2) normal weight, (3) overweight or (4) obese (Cole, Bellizzi, Flegal, & Dietz, 2000).

**Liking of the television clip**
A Visual Analogue Scale (VAS) was used to investigate the girls’ attitudes towards the television clip. They were asked to indicate on a line (14 cm) to what extent they liked the television clip they had seen, ranging from ‘not at all’ to ‘very much’.

**Body dissatisfaction**
The Children Figure Rating Scale was used to measure body image (Tiggemann & Wilson-Barrett, 1998). This scale has been often used in studies assessing body dissatisfaction in young children (e.g., Forbes et al., 2005; Greenleaf, Starks, Gomez, Chambliss, & Martin, 2004). A series of nine body silhouette drawings of figures ranging from 1 (very thin body figure) to 9 (obese body figure), was presented to the children. They were asked to choose the drawing which looked most like their own current body figure and the one which looked most like their ideal body figure. Absolute differences between the ideal and perceived current body figures were used as a measure for body dissatisfaction. This discrepancy measure was used as a dependent variable in our main analysis. In addition, we examined the effects of condition on the ideal and perceived current body figure as separate dependent variables, to examine whether differences between groups in discrepancy could be explained by a difference in perceived current or ideal body figure, or both. The use of the Figure Rating Scale has been shown to be valid for use in young children (Anschutz et al. 2008; Anschutz, Engels, et al., 2009; Anschutz, Kanters, et al., 2009; Gardner et al., 1997) and to have good test–retest reliability (Thompson & Altabe, 1991; Veron-Guidry & Williamson, 1996; Wood, Becker, & Thompson, 1996).

**Strategy of analyses**
Means and standard deviations of all variables are given, split by television clip condition and grade. When calculating the correlations between all model variables, average scores over the three television clip conditions were computed for each girl for liking of the television clip, body dissatisfaction, ideal body figure and perceived current body figure scores. This was done to enable examination of the general relations between these variables and stable variables such as grade and BMI to investigate which variables should be included as covariates in the main analyses. Additionally, possible differences on the girls’ attitudes towards the different television clips were tested using a mixed ANOVA, testing the effects of television clip exposure on liking of the television clip and the moderating role of grade in this relation.

To answer the main research question a mixed ANCOVA was conducted to examine the main effect of television clip condition (within-subject factor) and the interaction between television clip condition and grade (between-subject factor) on body dissatisfaction (discrepancy between ideal and perceived current body figure). Grade was used instead of age because grade has been found to be a better indication of developmental level than age (Alexander & Martin, 2004; Cliffordson & Gustafsson, 2008; Crone & Whitehurst, 1999). Because BMI was found to be related to body dissatisfaction, it was included as a covariate. Further, order of television clip exposure was included as a covariate to control for order effects.

Two additional mixed ANCOVAs were performed with ideal body figure or perceived current body figure as separate dependent variables, to test whether the effects of body dissatisfaction could be explained by differences in ideal or perceived current body figure.

Eta squared ($\eta^2$) was calculated for all tests of the mixed ANCOVA. Effect sizes of .01, .06, and .14 are considered small, medium and large effects, respectively. Effect sizes $r$ are given for within-subject contrast effects comparing two groups. Effect sizes between .00 and .20 reflect a small effect, effect sizes between .20 and .50 a moderate effect and effect sizes above .50 a large effect (Cohen, 1988).

**Results**

**Descriptives**
Table 1 shows the means and standard deviations of liking of the television clip, body dissatisfaction, ideal body figure, and perceived current body figure split by the three different television clips and grade. Most children were normal weight (80.0%), whereas 18.3% of the sample was overweight and 1.7% was obese. Table 2 shows the correlations between all model variables (average scores used for liking of the television clip, body dissatisfaction, ideal body figure, and perceived current body figure). It can be seen that BMI was significantly related to body dissatisfaction. Girls with a higher BMI showed higher body dissatisfaction. Therefore, BMI was included in the analyses as a covariate.
A significant interaction was found between television clip condition and grade on body dissatisfaction, ideality body figure and perceived current body figure, split up by television clip condition and grade.

Table 1
Means (standard deviation) of liking of the television clip, body dissatisfaction, ideal body figure and perceived current body figure, split up by television clip condition and grade.

<table>
<thead>
<tr>
<th>Holland's Next Top Model</th>
<th>Soap opera</th>
<th>Neutral television clip</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 4</td>
<td>Grade 5</td>
<td>Grade 6</td>
</tr>
<tr>
<td>Liking of television clip</td>
<td>9.04 (4.09)</td>
<td>8.93 (4.28)</td>
</tr>
<tr>
<td>Body dissatisfaction</td>
<td>0.48 (1.08)</td>
<td>0.46 (0.86)</td>
</tr>
<tr>
<td>Ideal body figure</td>
<td>4.29 (0.90)</td>
<td>4.55 (1.10)</td>
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<tr>
<td>Current body figure</td>
<td>4.76 (1.09)</td>
<td>5.00 (1.11)</td>
</tr>
<tr>
<td>Grade 5</td>
<td>Grade 6</td>
<td>Grade 4</td>
</tr>
<tr>
<td>Liking of television clip</td>
<td>9.08 (3.89)</td>
<td>9.63 (3.91)</td>
</tr>
<tr>
<td>Body dissatisfaction</td>
<td>0.38 (0.80)</td>
<td>0.82 (1.01)</td>
</tr>
<tr>
<td>Ideal body figure</td>
<td>4.24 (1.00)</td>
<td>4.18 (1.30)</td>
</tr>
<tr>
<td>Current body figure</td>
<td>4.62 (1.02)</td>
<td>5.00 (1.07)</td>
</tr>
<tr>
<td>Grade 6</td>
<td>Grade 4</td>
<td>Grade 5</td>
</tr>
<tr>
<td>Liking of television clip</td>
<td>10.53 (3.19)</td>
<td>10.95 (2.43)</td>
</tr>
<tr>
<td>Body dissatisfaction</td>
<td>1.24 (1.44)</td>
<td>0.82 (1.13)</td>
</tr>
<tr>
<td>Ideal body figure</td>
<td>4.24 (1.03)</td>
<td>4.41 (0.62)</td>
</tr>
<tr>
<td>Current body figure</td>
<td>5.47 (0.87)</td>
<td>5.24 (0.97)</td>
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</table>

Table 2
Pearson's correlations (N=60) between all model variables (using average scores on liking of the television clip, body dissatisfaction, ideal body figure and perceived current body figure).

<table>
<thead>
<tr>
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<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMI (categorized)</td>
<td>0.09</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liking of television clip</td>
<td>0.10</td>
<td>0.20</td>
<td>0.11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Body dissatisfaction</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Ideal body figure</td>
<td>0.20</td>
<td>0.32</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current body figure</td>
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</table>

Of all girls 51.7% had seen the thin ideal program before, 76.6% had seen the soap opera before, and 6.7% had seen the neutral movie before. ANOVAs showed that having seen a program before or not had no significant effect on body dissatisfaction, ideal body figure and perceived body figure of the girls at each time point. Therefore, having seen the program was not included in the analyses as a covariate. To check whether liking of the television clip had to be controlled for in the main analyses, correlations between body dissatisfaction, ideal body figure and perceived current body figure with liking of the television clip were computed for each time point separately. However, none of these correlations were significant, so liking of the television clip was not controlled for in the main analyses.

A mixed ANOVA was performed to test whether there were significant differences in liking of the television clip between television clip conditions, and whether these effects differed by grade. Mauchly's test showed that the assumption of sphericity was violated (χ²(2) = 8.76, p = .013). Therefore, Greenhouse–Geisser F-statistics were reported for this ANOVA. Television clip condition had a main effect on liking of the television clip, F(1,747, 99.583) = 7.04, p = .002, η² = .01, whereas grade did not, F(2, 57) = 0.28, p = .76, η² = 0.01. Within-subject contrasts showed that liking of the television clip differed between the thin ideal television clip and neutral television clip condition, F(1, 57) = 6.93, p = .011, r = .33. The girls liked the thin ideal television clip more than the neutral television clip. Liking of the television clip also differed between the soap opera clip and neutral clip, F(1, 57) = 12.02, p = .001, r = .42. Liking of the television clip was higher for the soap opera television clip than for the neutral television clip. No significant interaction was found between television clip condition and grade on liking of the television clip, F(3,494, 99.583) = 1.31, p = .28, η² = .04.

Body dissatisfaction

A mixed ANCOVA was conducted to test the effects of television clip condition and grade on body dissatisfaction (discrepancy between ideal and perceived current body figure), controlling for BMI and order of television clip exposure. Results of the Mauchly's sphericity test showed that sphericity could be assumed because the p-value was greater than .05 (p = .735). BMI had a significant positive effect on body dissatisfaction, F(1, 55) = 5.47, p = .03, η² = 0.09. No significant effect on body dissatisfaction was found for order of television clip exposure, F(1, 55) = 0.45, p = .51, η² = 0.01 or grade, F(2, 55) = 0.85, p = .44, η² = 0.03. No main effect was found of television clip condition on body dissatisfaction, F(2,110) = 3.02, p = .06, η² = 0.04. However, a significant interaction between exposure to the television clip and grade on body dissatisfaction was found, F(4,110) = 4.65, p = .002, η² = 0.17. Within-subject contrasts showed that body dissatisfaction differences between the thin ideal television clip condition and the neutral television clip condition differed by grade, F(2,55) = 8.28, p = .001, η² = 0.23. Girls in Grade 6 showed greater body dissatisfaction when they were exposed to the thin ideal television clip than when exposed to the neutral television clip, whereas girls in Grade 5 showed the opposite pattern and body dissatisfaction scores did not differ between conditions for girls in Grade 4 (Fig. 1). The difference between body dissatisfaction scores after watching the soap opera television clip and the neutral television clip did not significantly differ between grades (F(2, 55) = 0.34, p = .716, η² = 0.01).

To test whether the effects of television exposure on body dissatisfaction could be explained by differences in ideal or perceived current body figure, two additional mixed ANCOVAs were conducted with ideal body figure and perceived current body figure as separate dependent variables.

Ideal body figure

A mixed ANCOVA was conducted to test the effects of television clip condition and grade on ideal body figure, controlling for BMI and order of television clip exposure. Mauchly's sphericity test showed that sphericity could be assumed because the p-value for the within-subject factor was greater than .05 (p = .823). No significant effect on ideal body figure was found for BMI, F(1, 55) = 1.23, p = .28, η² = 0.02, order of television clip exposure, F(1, 55) = 0.30, p = .59, η² = 0.01, or grade, F(2, 55) = 0.30, p = .75, η² = 0.01. In addition, exposure to the television clip had no significant main effect on body dissatisfaction, F(1, 55) = 5.47, p = .03, η² = 0.09. No significant effect on body dissatisfaction was found for order of television clip exposure, F(1, 55) = 0.45, p = .51, η² = 0.01 or grade, F(2, 55) = 0.85, p = .44, η² = 0.03. No main effect was found of television clip condition on body dissatisfaction, F(2,110) = 3.02, p = .06, η² = 0.04. However, a significant interaction between exposure to the television clip and grade on body dissatisfaction was found, F(4,110) = 4.65, p = .002, η² = 0.17. Within-subject contrasts showed that body dissatisfaction differences between the thin ideal television clip condition and the neutral television clip condition differed by grade, F(2,55) = 8.28, p = .001, η² = 0.23. Girls in Grade 6 showed greater body dissatisfaction when they were exposed to the thin ideal television clip than when exposed to the neutral television clip, whereas girls in Grade 5 showed the opposite pattern and body dissatisfaction scores did not differ between conditions for girls in Grade 4 (Fig. 1). The difference between body dissatisfaction scores after watching the soap opera television clip and the neutral television clip did not significantly differ between grades (F(2, 55) = 0.34, p = .716, η² = 0.01).

To test whether the effects of television exposure on body dissatisfaction could be explained by differences in ideal or perceived current body figure, two additional mixed ANCOVAs were conducted with ideal body figure and perceived current body figure as separate dependent variables.

Ideal body figure
effect on ideal body figure, $F(2, 110) = 1.31, p = .28, \eta^2 = 0.02$. However, a significant interaction between exposure to the television clip and grade on ideal body figure was found, $F(4, 110) = 3.20, p = .016, \eta^2 = 0.10$. Within-subject contrasts showed that the difference between the ideal body figures after watching the thin ideal television clip and the neutral television clip differed between grades, $F(2, 55) = 5.22, p = .008, \eta^2 = 0.16$. Girls in Grade 6 reported thinner ideal body figures after watching the thin ideal television clip condition compared to watching the neutral television clip condition, whereas girls in Grade 4 and 5 showed the opposite pattern (Fig. 2). The difference between the ideal body figure after watching the soap opera television clip and the neutral television clip did not significantly differ between grades ($F(2, 55) = 1.18, p = .189, \eta^2 = 0.06$).

**Perceived current body figure**

A mixed ANCOVA tested the effects of television clip exposure and grade on the perceived current body figure, controlling for BMI and order of television clip exposure. Sphericity could be assumed because Mauchly’s sphericity test showed that the $p$-value for the within-subject factor was greater than 0.05 ($p = .70$). BMI had a significant main effect on perceived current body figure, $F(1, 55) = 12.42, p = .001, \eta^2 = 0.17$. No significant main effects on perceived current body figure were found for order of television clip exposure, $F(1, 55) = .08, p = .93, \eta^2 < 0.001$, grade, $F(2, 55) = 2.26, p = .12, \eta^2 = 0.06$ and television clip condition, $F(2, 110) = 0.72, p = .50, \eta^2 = 0.01$. In addition, no significant interaction was found between television clip condition and grade on perceived current body figure, $F(4, 110) = 1.21, p = .32, \eta^2 = 0.04$.

**Discussion**

The main finding of the present study was that the effects of exposure to thin ideal television on body dissatisfaction (discrepancy between ideal and perceived current body figure) differed by grade. Grade 6 girls (11–12 years old) showed an increase in body dissatisfaction after watching the thin ideal television clip than after watching the neutral television clip. Grade 5 girls (10–11 years old) showed lower body dissatisfaction after watching the thin ideal television clip than after watching the neutral television clip and Grade 4 girls (9–10 years old) had equal body dissatisfaction over conditions. The differences in body dissatisfaction could be explained by differences in ideal body figures after watching thin ideal television as compared to neutral television. After watching thin ideal television, Grade 6 girls desired a thinner body figure than after watching neutral television. In contrast, Grade 5 as well as 4 girls desired a thinner body figure after watching neutral television than after watching thin ideal television. Watching a soap opera did not differ from watching neutral television or thin ideal television with respect to body dissatisfaction (for all grades).

An explanation for the Grade 6 girls being more susceptible to thin ideal television making them desire a thinner body figure could be that girls in this grade become more vulnerable to thin ideal media influence. This might also explain why previous correlational studies did not consistently find a direct relation between thin ideal media and body dissatisfaction in younger samples (Anschutz, Engels, et al., 2009; Dohnt & Tiggemann, 2006a, 2006b; Harrison & Hefner, 2006). It has often been found that body image concerns are much stronger in children approaching adolescence (11–12 years) than children of younger age (e.g., Gardner et al., 1997; Flannery-Schroeder & Chrisler, 1996; Maloney, McGuire, Daniels, & Specker, 1989; Rolland, Farnill, & Griffiths, 1997). Girls enter a critical period of pubertal body transformation around the ages of 11–12, where they transition to breast buds, accrue more subcutaneous fat, and approach menses (Tanner stage 2 and 3, Marshall & Tanner, 1969). During this period, they might become more aware of social and cultural norms regarding bodily appearance, which makes them more susceptible to incorporating these norms and apply them to their own body (see also Corrufo, Cella, Cremato, & Labella, 2007). Not only are older preadolescents more aware of social norms, but also they are dealing with transitions in body shape themselves, which can influence their perceptions of own bodies. The obvious reinforcement of being thin in the thin ideal television show might have provided them with the idea that thinness is the norm and is associated with positive outcomes which made them desire a thinner body figure for themselves.

In line with this, when girls grow older, adult images may become more relevant and easier to identify with. Previous research revealed that individuals are more likely to be influenced by a specific media model when they identify with the model (e.g., Austin, Chen, & Grube, 2006; Dal Cin, Gibson, Zanna, Shumate, & Fong, 2007; Moyer-Guse & Nabi, 2010). Young girls approaching puberty may identify more with ‘real’ persons – actors – rather than with animated characters because they represent a more relevant social reference group which might amplify the effects of thin ideal exposure (Terry & Hogg, 1996). Moreover, the older girls in our sample may have perceived themselves as more similar to the media models than the younger girls, which increased the motivation to adopt some of the attitudes or values carried out by the model (see also Hoffner & Buchanan, 2005; Scull, Kupersmidt, Parker, Elmore, & Benson, 2010). Girls in earlier grades have not entered this phase yet, and might therefore be less susceptible to the direct effects of thin ideal media on body dissatisfaction.

Interestingly, watching thin ideal television affected the ideal body figure of the girls but not their perceived current body figure. Previously, it was found that thin ideal television affected the perceived current body figure but not the ideal body figure in young women (Anschutz, Spruijt-Metz, Van Strien, Van Schie, Becker, & Engels, 2010; Lavine, Sweeney, & Wagner, 1999). Perhaps, young women have already internalized thin ideal norms provided by the media, whereas body ideals are still malleable in preadolescent girls. Ideal body figures in young girls may be less stable and more susceptible to change through contextual cues. Previously, it was suggested that thin ideal internalization stabilizes during adolescence (Clark & Tiggemann, 2006; Tiggemann, 2006). This suggests that interventions aiming at reducing the influence of thin ideals in the media could very well focus on pre-adolescent girls.

The finding that the younger girls chose a larger ideal body figure after watching thin ideal television was an unexpected finding. Perhaps, watching the young women in the television show made them want to look more mature and more ‘feminine and curved'
which manifested in choosing a larger ideal body figure. However, this assumption is speculative and needs further examination. Future studies should include future body ideals (see also Harrison & Hefner, 2006) to enable to distinguish between the current ideal body figure and the future body ideal in young girls.

In the present study, no effect was found for watching the soap opera on body dissatisfaction. This suggests that body image in young girls might especially be directly affected when explicit emphasis is placed on the thin ideal in television programs, whereas exposure to thin media models without explicit reference to the thin ideal does not directly affect their body image. Watching thin ideal television might have activated appearance schemas in young children, as was previously found in early adolescents who watched thin ideal television commercials (Hargreaves & Tiggemann, 2003). Perhaps the soap opera did not directly activate appearance schemas because the storyline was not focused on appearance at all. However, it is possible that watching soap operas does affect body image in the longer term, for example because girls who are exposed to thin ideal models more often are more likely to internalize thinness as a norm and subsequently develop a drive for thinness (see also Anschutz, Engels, et al., 2009; Anschutz, Kanters, et al., 2009; Tiggemann, 2005; Tiggemann & Pickering, 1996). A suggestion for future research might be to include measures of appearance schema activation, to establish whether this concept mediates the relation between thin ideal media exposure and body image in young girls.

The present study was the first to show a direct effect of watching adult thin ideal television on body dissatisfaction in young girls, in that girls in Grade 6 desired a thinner body figure after watching thin ideal television than after watching neutral television. One strength of the current study is the experimental within-subject design that was used. The most important advantage of using a within-subject design is a reduction in error variance associated with individual differences in the level of body satisfaction between the girls (Greenwald, 1976). Another strength is the comparison of exposure to an explicit thin ideal television program with a less explicit form of thin ideal television.

Our findings are limited to the short term effects of exposure to thin ideal focused television. It is important to further study the relations between thin ideal television exposure and body image over time, to investigate whether watching thin ideal television contributes to internalization of a thinner body ideal and subsequent lower body satisfaction in the long term. For example, this could be done by repeatedly testing the same group of girls using the study design of the present study and assessing the development of the relation between watching thin ideal television and ideal body figure ratings over time. Previously, it was found that watching appearance related television was related to lower appearance satisfaction in young girls one year later (Dohnt & Tiggemann, 2006b). Furthermore, young girls who reported attempting to look like female media models were found to be more likely to become weight concerned over time (Field, Camargo, Taylor, Berkey, Roberts, & Colditz, 2001). Possibly, frequently repeated drops in body satisfaction after exposure to television containing thin ideal cues contribute to a general decrease in body satisfaction and increasing attempts to achieve a thin ideal – e.g., by dieting – over time. However, we can only speculate about the duration and development of the effects we found in the current study, which stresses the need for longitudinal studies in addition to experimental studies investigating the short term effects.

Another shortcoming might be that no information was obtained about how the girls perceived the characters in the television clips regarding the body figure, to further examine the differences between exposure to the soap opera and the thin ideal program. Future studies should include a measure of the girls’ body figure perception of the media models, to establish whether the girls perceived body figure of the soap opera actresses differently than the body figures of the women in the thin ideal program. This would provide more insight into the underlying mechanisms in the relation between type of thin ideal cues exposure and body image. Another limitation of the present study might be that girls reported that they liked the neutral television clip less than the other two clips. In future research, care should be taken that the neutral stimulus material is of comparable interest to the girls as the television programs used in the other television clips. This could be tested in a pilot study.

In addition, to avoid potential reactivity effects of weighing and measuring the girls, future studies might rather measure BMI after the last session than after the first session. Future studies should also include measures of pubertal development, to test the assumption that the effects of exposure to thin ideal media in older children could be explained by the pubertal transformation period they are entering. Furthermore, no baseline measure of body dissatisfaction was included. This would have enabled us to check whether body dissatisfaction levels in our control condition (the neutral movie condition) corresponded with baseline levels of body dissatisfaction or whether the neutral movie itself had an effect on body dissatisfaction. Finally, one may question whether a Figure Rating Scale is the most suitable way to capture (small) state changes in body image (see also Gardner & Brown, 2010). For example, ideal body figure and perceived own body representations might be relatively stable. In addition, the larger body figures might have been perceived differently – e.g., as more mature – by the younger children in our sample, which might (partly) explain the remarkable results regarding the ideal body figure found in these grades. Future studies might use other measures to establish state body image in young children. For instance, a Visual Analogue Scale could be used to measure state dissatisfaction with the body. For its convenient and easy use, VAS is often used in studies with young children samples and has been found to be a reliable method to assess self-reports (e.g., Abu-Saad, Kroonen, Halfens, 1990; Van Laerhoven, Van der Zaag-Loonen, & Derkx, 2004).

Watching adult television might reinforce and clarify sociocultural messages stressing importance of female attractiveness and thinness that children are provided with already at a young age. Media targeted at very young children were found to contain a lot of stereotypical ‘beauty’ messages (Herbozo et al., 2004; Klein & Shiffmann, 2005, 2006) which may lay the foundation of later sociocognitive development and enhance the effects of exposure to thinness cues in adult television. A suggestion for further research is to experimentally examine the direct effects of thin ideal children’s programs on young girls’ body image (see also Hayes & Tantleff-Dunn, 2010). For example, cartoons (i.e., Totally Spies, Kim Possible) aimed at young girls often contain female characters with unrealistic bodily proportions (i.e., extremely thin waist, large breasts and long legs). It would be interesting to examine whether watching these cartoons affects girls’ body image as well. It would be interesting to test the effects of watching children’s media containing thin ideal cues on body dissatisfaction in girls older than six years, as Hayes and Tantleff-Dunn (2010) found no direct influence in girls aged between 3 and 6 years. Given the limited generalizability of the present study (relative small and homogeneous sample), the results should be replicated in different samples. For example, future research could include boys, since it was found that men are also susceptible to an ideal male image provided by the media (e.g., Blond, 2008; Hargreaves & Tiggemann, 2004; Leit, Pope, & Gray, 2001). It would be interesting to test what types of television shows affect young boys’ body image using the present study’s design.

To conclude, the present study provides interesting new insights in the direct effects of watching thin ideal television in young girls. The findings imply that watching (adult) thin ideal television nega-
tively affects body ideals in older preadolescents. Parents might be careful in allowing their children watch these programs, because they might encourage the girls to internalize a thinner ideal body figure.

References


