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Mirror, mirror on the wall, who wants to be the thinnest of them all?
The immediate effect of thin ideal exposure on food intake of overt and covert narcissistic girls

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Abstract

This study experimentally tested the immediate effect of thin ideal media exposure on food intake of overt and covert narcissistic (pre-)adolescent girls (8-15 years old). A between subject design was used in which the girls ($N = 400$) participated in a taste test after watching a slideshow of thin, average or plus size models. No differences on food intake between the exposure conditions were found for both overt and covert narcissistic girls. Possibly the susceptibility for the thin ideal representations is more age specific, or compensation for food intake takes place by other means (e.g., exercising) than restrained eating. However, in this study it can be concluded that there is no immediate effect of thin ideal exposure on the intake of high caloric foods among overt and covert narcissistic girls.

Keywords: overt narcissism, covert narcissism, thin ideal, food intake

Media are one of the most powerful forces in the lives of young people. Viewing TV shows, playing videogames, visiting websites or reading books and magazines for over 50 hours a week, children and adolescents are constantly confronted with messages about values and social norms (Anschutz, Engels, & van Strien, 2012; Anschutz, Spruijt-Metz, van Strien, & Engels, 2011; Malikhao & Servaes, 2011). Knowing that adult media contains thin ideal cues, children that become interested in adult media from the age of nine, are receiving information about how they should look like and how they should manage their appearance. Through this constantly provided thin ideal representation, children learn that thinness is associated with happiness, status, desirability and attractiveness (Anschutz & Engels, 2010; Anschutz et al., 2011; Strahan, Spencer & Zanna, 2007; Tiggeman, 2006), while obesity is associated with being less happy and having fewer friends (Anschutz & Engels, 2010). Children as young as five years old experience a desire to be thinner than their own silhouette drawing (Westerberg-Jacobson, Edlund & Ghaderi, 2010) and have a desire to lose weight, regardless of their size (Grabe, Ward & Hyde, 2008; Strahan et al., 2007).

Based on social comparison theory, stating that people tend to compare themselves to relevant others (Anschutz, Engels, & van Strien, 2012), girls consider thin media models relevant to compare themselves with, as thinness is carried out as a prevailing cultural norm (Anschutz, Engels, & van Strien, 2012). Also, experiencing the physical developments associated with the transition into an adult female body – with the development of breasts and the accrual of subcutaneous fat – also makes media models become more relevant to identify with and therefore makes girls that approach adolescence (11-12 years) more prone for the influence of thin ideals. This susceptibility is yet even more enhanced around that age, because of increased importance of social conformity and social comparisons (Anschutz,

Engels, & van Strien, 2012; Anschutz et al., 2011; Brunet, Sabiston, Dorsch & McCreary, 2010).

With models being over 20% underweight and often being thinner than the criteria for anorexia (i.e., with 15% underweight the diagnostic criteria for anorexia nervosa are met, American Psychiatric Association; Dittmar & Howard, 2004; Grabe, et al., 2008), most girls can never attain a body as thin as the thin ideal standard (Dittmar & Howard, 2004; Westerberg-Jacobson et al., 2010). Therefore, some girls may feel unable to live up the unrealistic thinness standards and consequently feel dissatisfied with their own bodies according to the 'negative contrast' theory that builds upon the social comparison theory (Anschutz, Engels, & van Strien, 2012). Dutch girls as young as 9-10 years old, have negative body images (14%), find themselves too fat, while having normal body weight (7%), and show weight loss behaviors (7%). Among children around 13-14 years old, these rates have even doubled or tripled, (33%, 28% and 13% respectively; Bun, Schwiebbe, Schütz, Bijlsma-Schlösser, & Hirasing, 2011). Those girls, who in fact move away from the thin ideal figure by gaining body fat during puberty (Tiggeman, 2006), thereby develop a drive for thinness that is associated with exercising and dieting (Anschutz, Engels, & van Strien, 2012; Brunet et al., 2010; McCabe, Ricciardelli & Banfield, 2001; Westerberg-Jacobson et al., 2010).

Recently, research has shown that exposure to thin ideal television directly affects body dissatisfaction and compensating eating behaviors, such as restrained eating (Anschutz et al., 2011). Other research, with young girls playing with thin dolls also found a direct effect on the actual food intake of young girls. Girls playing with – unrealistic – thin dolls, ate less than girls playing with average sized dolls (Anschutz & Engels, 2010). Eating behaviors have become of special concern since it is known that eating patterns are formed early in life and are likely to persist into adulthood (Grabe et al., 2008; Westerberg-Jacobson et al., 2010). Knowing that girls who wish to be thinner are four times more likely to develop disturbed eating attitudes and have an increased risk of developing clinical eating disorders, it is important to help young girls to establish healthy and regular eating habits (Westerberg-Jacobson et al., 2010).

Despite the many studies that link thin ideal exposure and eating behaviors (e.g., Anschutz & Engels, 2010; Anschutz, et al., 2011; Dittmar & Howard, 2004; Grabe et al., 2008; Strahan, Spencer & Zanna, 2007), little evidence exists that media exposure per se is causal in the development of body image concerns and disturbed eating among young girls (Tiggeman, 2006). The relation seems to be more complex than was previously thought, and individual characteristics appear to play a moderating role. Instead of the amount of media,

the responsiveness and vulnerability to the media influence, depending on one's personality, may in fact be most important for the development of adolescents body image and eating behaviors (Tiggeman, 2006; Westerberg-Jacobson et al., 2010).

One individual characteristic that is related with body image concerns and eating patterns is narcissism (Campbell & Waller, 2010; Gordon & Dombeck, 2010). Narcissism, which is defined as a pervasive pattern of grandiosity, self-focus and self-importance (American Psychiatric Association, 2000) is characterized by a grandiose view of the self on one hand, and an adversarial interpersonal orientation on the other hand (Morf & Rhodewalt, 2001; Thomaes, Stegge, Bushman, Olthof & Denissen, 2008). Narcissists are preoccupied with dreams of success, brilliance and beauty and expect admiration and special treatment from others. At the same time they worry obsessively about what others think of them and react with anger, defiance or shame to treats to self-esteem (Campbell & Waller, 2010; Morf & Rhodewalt, 2001; Thomaes et al., 2008; Thomaes, Reijntjes, Orobio de Castro, Bushman, Poorthuis & Telch, 2010). Narcissism is associated with excessive attention to personal appearance (Zeigler-Hill, Clark and Pickard, 2008) as well as weight preoccupation (Gordon & Dombeck, 2011) and body-checking (Waller, Sines, Meyer, & Mountford, 2008).

Thus, while a drive to meet the beauty ideal has often been linked to narcissistic traits, only two studies (Gordon & Dombeck, 2010; Maples, Collins, Miller, Fischer, & Seibert, 2011) made a distinction between the two types of narcissism; the overt (grandiose) type and the covert (vulnerable) type. Overt narcissists are characterized by their high self-esteem and insensitivity to the impact they have on others. They maintain their inflated self-views by devaluing others. Covert narcissists typically have relatively low self-esteem, while having high expectations about the self. They are hypersensitive to criticism of others and rely upon external feedback to manage their self-esteem (Dickinson & Pincus, 2003; Cain, Pincus & Ansell, 2008; Thomaes, Bushman & Stegge, 2009). Although both overt and covert narcissistic subtypes are related to narcissism's association with excessive attention to personal appearance, research suggests that only covert narcissists base their self-esteem on physical appearance (Zeigler-Hill et al., 2008). In line with the above assumption, Gordon and Dombeck (2010) found that only covert narcissism, but not overt narcissism, was correlated with weight preoccupation in a sample of young adults. In addition, Maples, Collins, Miller, Fischer and Seibert (2011) found that only covert narcissism, but not overt narcissism, was correlated with compensatory eating behavior. It is thought that the overt narcissists' way of coping with feedback (about physical appearance) by devaluing others, might protect them

from weight preoccupation and the possible development of unhealthy eating behaviors (Gordon & Dombeck, 2010).

Until now, no overt and covert distinction has yet been made for children. Therefore, the present study is the first to experimentally test the immediate effect of thin ideal images on food intake of nonclinical overt and covert (pre-)adolescent girls. In line with previous findings (Anschutz & Engels, 2010; Anschutz, Engels, Becker, & van Strien, & Engels, 2009; Westerberg-Jacobson et al., 2010), it was expected that all girls, regardless of personality characteristics, eat less food after thin ideal exposure compared to girls exposed to average or plus size images. Further, in line with Gordon and Dombeck (2010) and Maples, Collins, Miller, Fischer and Seibert (2011), it was expected that covert narcissistic girls are more susceptible to the influence of exposure to thin models than are overt narcissistic girls. More specifically, it was expected that covert narcissistic girls eat less fattening foods after thin ideal exposure than overt narcissistic girls.

Method

Participants and Design

The sample consisted of 400 girls from 12 primary ($n = 236$) and 5 secondary ($n = 164$) schools in the Netherlands. Most girls were ethnic Dutch (88.8 %) and born in the Netherlands (97.8 %). The mean age of the sample was 11.53 ($SD = 1.93$, age range = 7-15 year). No differences between conditions were found for age, $F(1,398) = .15$, $p = .70$, narcissism, $F(1,398) = 1.08$, $p = .30$ and body esteem, $F(1,392) = 1.20$, $p = .28$.

A between-subject design was used in which the girls were tested on two different days. Girls were randomly assigned to the experimental condition (viewing a thin model, $n = 155$) or the control condition (viewing an average or plus size model, $n = 245$).

Measures

Narcissism. Narcissism was measured as a personality trait, using the 10-item Childhood Narcissism Scale (Thomaes et al., 2008). This self report measure assesses a grandiose yet vulnerable view of the self and an adversarial interpersonal orientation, which are thought to be the core components of narcissistic characteristics (Thomaes et al., 2008; Brown & Zeigler-Hill, 2004). Items (e.g., *"I am a very special and extraordinary person", "Children like me are entitled to something extra", "I am a great example for other children to follow"*) were positively worded and scored on a 4-point scale ranging from 0 (*not at all true*) to 3 (*completely true*). Ratings were summed and averaged, with higher scores

indicating higher levels of narcissism. Average scores were centered before analysis (Cronbach's α of the present sample = .77).

   Body-esteem. To assess body-esteem, the Dutch translation of the 20-item Body Esteem Scale for Children (Mendelson & White, 1993) was used. The body esteem questionnaire measures the participants satisfaction with their body (e.g., *"I am proud of my body", "I am often worried about how I look", "I wish I was thinner"*) on a 4-point scale ranging from 0 (*not at all true*) to 3 (*completely true*). After polarity reversal ratings were averaged, with higher scores indicating higher levels of body-esteem. Average scores were centered before analysis (Cronbach's α of the present sample = .92).

   Covariates. Because food intake may depend on level of satiety and liking of the test food, these variables were controlled for in the regression analyses. Prior to the taste test the participants were asked to indicate on a 5-point scale to what extent they felt hungry, ranging from 0 (*not at all hungry*) to 4 (*very hungry*). Liking of the test food (e.g., *"How much do you like the potato chips*?") was rated during the taste test by rating each of the test products on a 5-point scale from 0 (*not at all*) to 5 (*very much*).

   Food Intake. The main variable of interest was the amount of food eaten by the girls. During a taste test the participants received three round plastic plates (⌀ = 13 cm) containing 40 plain milk chocolate M&Ms, 20 Pringles original potato chips and 20 average sized (5-9 gram each) white grapes. Afterwards, the quantity of test food that was eaten by the participants was counted from each plate. The quantity of test food that was eaten was standardized for each test product and then summed to create an average score on calorie rich (M&Ms and chips) and calorie poor (grapes) food intake. Calorie poor food intake was also controlled for in the regression analyses.

Procedure

Principals were sent a written invitation for their school to participate, with information on procedure and purpose of the study included. After approval of the school's engagement, separate invitations were sent to all the girls and parents, with information on procedure, purpose of the study and all data being be treated confidentially included. Informed consent was required from the girls and their parents in order for the girls to participate. The girls took part in a classical and individual session and were told they cooperated in a study in which the experimenters where interested in the girls' taste (e.g., about clothes and food) and thoughts about their selves. Both classical and individual sessions were conducted according to protocol.

During regular school hours all girls completed a pack of self-report measures in a classical session to assess narcissism and body-esteem. To guarantee privacy, the girls were asked to move the tables apart and to work for themselves in silence.

From a week up to a few weeks after the classical session, the girls were individually tested for approximately 15 minutes per session. An experimental setting, using a separate room to ensure privacy, was created at each school. The girls watched a slideshow that automatically showed ten model photos for fifteen seconds per photo. Depending on the condition the girls viewed a slideshow of a thin, an average or a plus size model, and were told that the model on the photos was the winner of the America's Next Top Model TV-show. Following the slide show, the girls were asked to answer a few questions about their opinion about the model photos.

Next the participants participated in a taste test. They received three round plastic plates containing the test food and a glass of water. They were instructed to taste at least one test food item of each plate, but were told they could eat as much as they wanted. During five minutes the girls were asked to taste and judge the food by answering questions about the test food. To ensure privacy, the experimenter left the room and came back after exactly five minutes.

Results

Preliminary analysis

An analysis of variance (ANOVA) showed significant differences between conditions for five of the 10 items that assessed the girls opinion on the model photos in the slideshow (see table 1). Post-hoc Bonferroni tests revealed that the girls thought the thin model looked less beautiful than the average and plus size model ($p = .000$ and $p = .000$ respectively), and more ugly ($p < .01$) and boring ($p = .02$) than the plus size model. The girls wanted to look more like the average ($p < .05$) and plus size model ($p < .03$) than the thin model and thought other girls of their age would find the plus size model more beautiful than the thin model ($p < .01$).

Table 1 shows the means and standard deviations of all variables, split by condition. An ANOVA revealed no significant differences between conditions on narcissism, $F(3,398) = 1.08$, $p = .30$, body esteem, $F(1,392) = 1.20$, $p = .28$, age, $F(1,398) = .15$, $p = .70$, satiety, $F(1,398) = .63$, $p = .43$, liking of calorie rich test food, $F(1,397) = 1.40$, $p = .24$, and calorie poor food intake, $F(1,398) = .69$, $p = .41$, indicating that randomization was successful.

Table 1
Means and standard deviations of all variables separated by condition.

Measures	Thin model (N = 155)	Average model (N = 113)	Plus size model (N = 132)
Manipulation check			
Want to look like model [a]	.88 (1.07)	1.22 (1.12)	1.20 (1.10)
The model is an example for me [a]	.61 (.97)	.77 (.95)	.83 (.93)
Most girls want to look like this model [a]	2.33 (1.01)	2.67 (.91)	2.55 (.96)
Predictor variables			
Narcissism [a]	1.01 (.49)	1.10 (.48)	1.03 (.44)
Body Esteem [a]	2.11 (.52)	2.07 (.49)	2.02 (.54)
Age	11.57 (1.99)	11.59 (1.94)	11.39 (1.83)
Covariates			
Satiety [a]	1.75 (.94)	1.66 (1.10)	1.67 (1.04)
Liking of calorie rich test food [b]	3.32 (.73)	3.36 (.70)	3.46 (.68)
Calorie poor food intake [c]	.04 (.85)	-.07 (.74)	.03 (.81)
Dependent variable			
Calorie rich food intake [c]	.05 (.89)	-.10 (.76)	.07 (.95)

[a] Scores on this scale could range from 0 to 3.
[b] Scores on this scale could range from 0 to 4.
[c] Scores are standardized values.

Primary analyses

A multiple hierarchical regression showed no significant main effects on calorie rich food intake for condition (t = -.03, β = -.00, p = .97), narcissism (t = 1.71, β = .08, p = .09) and body-esteem (t = -.37, β = -.02, p = .71). In addition, no significant interaction effect for condition, narcissism and body-esteem on calorie rich food intake was found (t = -.17, β = -1.48, p = .14). Thus, contrary to my expectations, preadolescent girls did not eat less calorie rich food after thin model images, compared to girls who saw average or plus size model images. Also, no distinction between overt and covert narcissistic girls was found on calorie rich food intake after thin ideal exposure.

Discussion

The present study sought to advance knowledge on the effect of thin ideal exposure on food intake of overt and covert narcissistic girls. Contrary to my expectations, the results showed no differences on calorie rich food intake for thin, average or plus size model exposure. Also, no effect of narcissism on calorie rich food intake was found.

Previous work that linked narcissism to compensatory eating behaviors, demonstrated differential relationships between overt and covert narcissism in both men and women (Gordon & Dombeck, 2010; Maples, Collins, Miller, Fischer, &Seibert, 2011), but this

distinction had not yet been made for children. The findings of this study indicated, contrary to my expectations, that thin versus average or plus size model exposure had no influence on the food intake of overt narcissistic girls. For covert narcissistic girls, who were thought to be more susceptible for the influence of thin ideal exposure than overt narcissistic girls, also no differences on calorie rich food intake was found for all exposure conditions.

There are at least three possible explanations for the findings of this study. It has been theorized that the susceptibility for thin ideal influence is strongest when girls approach puberty at 11-12 years of age (Anschutz et al., 2011; Brunet et al., 2010). The broad range of age in this study (girls from 8 to 15 years old) may have prevented to find results, assuming that the youngest girls of the sample are not yet susceptible for thin ideal influence. Raising percentages of body image concerns and weight loss behavior at 13-14 years compared to girls at 9-10 years old (Bun, Schwiebbe, Schütz, Bijlsma-Schlösser, & Hirasin, 2011), suggest that the effect of thin ideal exposure on food intake may be more extant when girls grow older. Future research could therefore focus on an older and a more specific age range to investigate at what age the susceptibility for thin ideal influence is present.

Another explanation is that compensation for wanting to meet the thin ideal may take place in other forms than restrained eating. Gordon and Dombeck (2010) showed that though covert narcissism is associated with compensatory eating behaviors like restrained eating, overt narcissism was not. However, overt narcissism appears to be associated with a drive for muscularity in both men and women that is associated with exercising (Campbell & Waller, 2010; Gordon & Dombeck, 2010). Thus restrained eating may not be the only strategy to serve the thin ideal. Future research should also take a look at the influence of thin ideal exposure on other compensatory behaviors, like exercising.

These findings should be considered in light of the study's strengths and limitations. The participants of the present study did not like the thin ideal model images, and in fact liked the average and plus size models (control conditions) even better. Therefore, the manipulation as was conceived in advance, may not have worked and could have affected the results. Logically, when the girls did not want to look like the model, they probably did not alter their food intake to try to meet the model's thinness. Therefore, in future research the effect of thin ideal exposure should be moderated by how much the girls want to look like the model. Based on the results, also some adjustments in the research materials are suggested. The model images could not have been a good sample to identify with, because the model images used were from models in their twenty's. Future research should make use of models from the same age as the participants, so the girl's identification and comparing with the models,

according to social comparison theory (Anschutz, Engels, & van Strien, 2012), is more relevant. Also, in this study different models were used for each model exposure condition. Better is to photographically manipulate images of one model into thin, average and plus size images.

In addition to the above suggestions, further research should also expand the thin ideal exposure effects on other compensatory behaviors like exercising. Second, because of the suggested complexity of one's vulnerability to thin ideal influence (Tiggeman, 2006), it would be valuable to investigate other personality traits than narcissism. For example, perfectionism (Davis, Karvinen & McCreary, 2005) social physique anxiety (Brunet et al., 2010), and neuroticism (Maples, Collins, Miller, Fischer & Seibert, 2011) have also appeared to be related with both narcissism and a drive for thinness and muscularity (Gordon & Dombeck, 2010).

Last, the lack of effect on girl's food intake, merely indicates that there is no effect of thin ideal exposure on food intake for 8 to 15 year old girls. Despite several studies that indicate relations between thin ideal exposure and food intake or body image concerns, there are also several studies who fail to show this link (Tiggeman, 2006). The experimental setting and large sample size of this study ensures a solid investigation with reliable results, while other studies might rely on correlational research or the use of self-report measures. Therefore, from this study sample it is safe to conclude that there is no effect of thin ideal exposure on food intake for overt and covert narcissistic (pre-)adolescent girls.

To conclude, this study investigated the immediate effect of thin ideal exposure on food intake of (pre-)adolescent girls. Many people decry the very thin fashion models and worry about the negative impact on body image and eating behaviors of young girls. However, concluding from this study sample, maybe we do not have to worry that much. In fact, research shows that it is not the thin ideal exposure that makes girls eat less food, but it is the exposure to heavier models that leads to elevated food intake (Anschutz & Engels, 2010). Although thin ideal exposure does appear to lead to higher levels of body dissatisfaction, body dissatisfaction in girls has been strongly linked to the physical changes in puberty, regardless of thin ideal exposure (McCabe, Ricciardelli & Banfield, 2001). Thus, perhaps the girls do experience a drive for thinness, as is shown by other research, but the girls, who did not even like the thin model in this study sample, are well capable of distinguishing healthy and unhealthy thinness and eating behaviors.

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