

Body Dissatisfaction Among Adolescent Boys and Girls: The Effects of Body Mass, Peer Appearance Culture and Internalization of Appearance Ideals

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Abstract Body image dissatisfaction is a significant risk factor in the onset of eating pathology and depression. Therefore, understanding predictors of negative body image is an important focus of investigation. This research sought to examine the contributions of body mass, appearance conversations with friends, peer appearance criticism and internalization of appearance ideals to body dissatisfaction among adolescents. The sample was comprised of 239 (54% female) adolescents, with a mean age of 16 years. Self-report questionnaires were completed on body dissatisfaction, peer appearance conversations and criticism, internalization of appearance ideals, height and weight. For girls and boys, body mass, appearance conversations with friends, peer appearance criticism and internalized appearance ideals emerged as significant predictors of body dissatisfaction. Gender moderated the effect of body mass on body dissatisfaction. Internalization mediated the relationship between peer appearance conversations and criticism, and body dissatisfaction. These findings suggest that while body mass exerts a differential risk for body dissatisfaction among boys and girls, internalisation may represent a key psychological process that underpins body dissatisfaction among both boys and girls.

Keywords Body dissatisfaction · Internalization · Adolescence · Peer influence · Body mass · Gender differences

Introduction

Adolescence may be characterised as a decisive period in the development of body image. The considerable social, cognitive and physical changes experienced at this time contribute to the heightened awareness of body and weight concerns among adolescent males and females (Ata et al. 2007). Contemporary research suggests that body image dissatisfaction, or subjective unhappiness with some aspect of one's appearance, is indeed a prevalent concern with approximately 30% of boys and 60% of girls reporting a desire to alter their shape or size (Ricciardelli and McCabe 2001; Stice and Whitenton 2002). Body image dissatisfaction is of growing importance owing to its implication as a risk factor in the subsequent onset of eating disorders (Stice et al. 2002), depression (McCreary and Sasse 2000), emotional distress (Johnson and Wardle 2005) and low self-esteem (Stice and Bearman 2001). Given the negative consequences of body image dissatisfaction, it is imperative that factors associated with and contributing to negative body image are explored.

Socio-cultural models have been prominent in explaining the development of body image dissatisfaction among young people. These models propose that society promotes an appearance culture that highlights the desirability of physical attractiveness and beauty for both males and females (Thompson et al. 1999; Keery et al. 2004). Female beauty is inextricably linked to thinness, with low body weight defined as a central attribute and key evaluative dimension of physical attractiveness (Stice et al. 2000; Nichter and Nichter 1991). In contrast with the thin ideal espoused for females, evolving cultural ideals of male appearance endorse a muscular or mesomorphic physique (Frederick et al. 2007; Grogan 2008). While males and females may be aware of socio-cultural ideals, it has been

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argued that girls respond with greater intensity to these body ideals, and consequently experience greater body image dissatisfaction than boys (Knauss et al. 2007).

These cultural ideals of beauty and body shape are modelled and reinforced through societal factors of which the mass media is arguably the most powerful communicator. Repeated exposure to media images of unrealistically thin females and muscular males may significantly impact development and maintenance of body image through internalization of cultural ideals (Levine and Murnen 2009; Dittmar 2009). Greater exposure to media influence does not necessarily predict body dissatisfaction however, suggesting that the media only represents one element of the appearance culture and that body discontent may develop through reinforcement of cultural appearance ideals from more immediate socialisation agents, such as peers and parents (Ata et al. 2007; McCabe and Ricciardelli 2005). Indeed, Keery et al. (2004a, b) Tripartite Influence Model of body dissatisfaction identifies the media, peers and parents as the three formative socio-cultural influences on body image.

Relative to the media and parents, peer influences on body image have received less attention in the research literature; thus, the current study sought to contribute to research in this area by focusing upon the influence of peer experiences on body image dissatisfaction. Peer experiences provide an important social context, in which appearance norms and ideals are communicated, modelled and reinforced, and, thus, may be of significant consequence for body image development (Jones and Crawford 2006; Thompson et al. 2007; Shroff and Thompson 2006). There are a number of peer experiences that are hypothesised to influence body image dissatisfaction, such as appearance conversations, criticism and teasing (Jones et al. 2004). The predictive role of these specific peer experiences (appearance conversations and peer criticism and teasing) in body image dissatisfaction was the first key focus of our investigation.

Appearance Conversations with Friends

Adolescents partake in “appearance training” with peers through everyday engagement in conversations regarding looks, image and attractiveness (Jones 2004). These appearance conversations provide an environment in which looks and image concerns are focused upon, interpreted and subsequently come to be valued. The time and attention given to body image issues reinforce the significance of appearance as a central attribute to peers and promotes the creation and adoption of appearance norms and ideals (Jones 2004). Peer appearance conversations may be particularly influential in body image development due to the vast amount of time spent with same-gender peers, the high

value attached to such friendships and the significance of friends in developing and determining the adolescent’s social perspective (Shroff and Thompson 2006; Berndt and Keefe 1995).

Previous research has confirmed that children and adolescents reporting more frequent conversations with peers about appearance and possible ways of enhancing appearance demonstrated greater body dissatisfaction and internalization of appearance ideals than those who engaged in appearance conversations less regularly (Clark and Tigge-mann 2006; Jones 2004). Gender differences have been evidenced regarding the frequency with which males and females engage in peer appearance conversations with adolescent females being more inclined than males to discuss appearance and weight loss concerns with peers (Jones et al. 2004; Murray et al. 1995). More recently, Jones and Crawford (2006) argued that, while girls reported more frequent engagement in general appearance conversations, boys talked more frequently to peers about muscular enhancement than girls talked to friends about dieting. It appears that males actively partake in appearance related conversations when the focus is on muscularity, as muscle building talk fits with the masculine appearance ideal and, therefore, it may be considered socially desirable to adopt behaviours designed to approximate this “muscular” physique ideal. Furthermore, male friendships are typically more activity focused; muscle building talk may provide a stereotypical interest that can be jointly pursued with friends (Jones and Crawford 2006). These findings suggest that prior research may have underestimated male engagement in appearance conversations by focusing on topics of general appearance and weight loss, which are typically of greater concern to females.

Peer Appearance Criticism and Teasing

Peers are inextricably implicated in the teasing experiences of adolescent boys and girls (Mooney et al. 2009; Eisenberg et al. 2003). Empirical evidence from cross-sectional research has consistently identified a positive relationship between peer teasing about appearance and body dissatisfaction in boys and girls (Thompson et al. 2007; Barker and Galambos 2003). Jones et al. (2004) found positive associations between peer appearance criticism and body dissatisfaction and in particular peer appearance criticism was the strongest direct predictor of body image dissatisfaction among boys but not among girls.

Peer appearance criticism and teasing may be considered as a means through which norms and expectations of the peer appearance culture are identified, shared and acknowledged among adolescents. Negative peer appearance commentary is proposed to highlight appearance attributes that are deemed attractive, with criticism targeted towards boys

and girls who lack such attributes and thereby violate appearance norms (Jones et al. 2004). Actively experiencing criticism in regard to one's body produces a direct experience of negative evaluation of one's personal appearance by another. Thus, peer teasing may also promote the internalization of cultural ideals by reinforcing the value of appearance to peers (Jones et al. 2004). In other words, internalization may be a key psychological process linking peer teasing with body dissatisfaction.

Internalization of Appearance Ideals

Internalization of appearance ideals refers to the extent to which an individual cognitively buys into socially defined ideals of attractiveness, incorporates these standards into one's personal belief system and commits to behaviours intended to produce an approximation of these ideals (Thompson and Stice 2001). The commitment to societal appearance standards that are virtually unattainable theoretically promotes body dissatisfaction due to inevitable discrepancies between one's current shape and the physical ideal (Stice and Whitenton 2002). However, conflicting findings have emerged in the literature regarding the role of internalization in the development of body dissatisfaction for boys and girls. Some studies have supported a relationship between internalization of appearance ideals and body dissatisfaction among girls (Chen et al. 2007; Knauss et al. 2008; Clark and Tiggemann 2008), and among boys (Halliwell and Harvey 2006; Knauss et al. 2007; Jones 2004). In contrast, other prospective research has found no support for internalization of appearance ideals as a predictor of change in body dissatisfaction among adolescent boys and girls (Bearman et al. 2006; Presnell et al. 2004). Together, these findings suggest that gender moderates the role between internalization and body dissatisfaction, although further research is needed to characterise the nature of this gender moderation.

Overall, the findings to date suggest that boys and girls may have varying experiences relating to peer appearance conversations and criticism, and internalization. Therefore, it is likely that the predictive influence of these experiences on body dissatisfaction may be distinct for boys and girls. In light of this, the current study sought to investigate how gender moderates the association between these peer experiences, internalization of appearance ideals and body dissatisfaction.

Internalization as a Mediator of Socio-Cultural Influences

Previous research has identified internalization as a critical mechanism underpinning the link between media exposure and body dissatisfaction (Thompson and Stice 2001), however internalization of media ideals appears to be

moderated by gender. Knauss et al. (2008) reported that internalization of the media body ideal directly predicted body dissatisfaction among girls, but not among boys. This gender difference resonates with an earlier finding reported by these authors that girls internalized media body ideals to a greater extent than boys; thus, greater endorsement of media ideals and perceived pressure to live up to these ideals may well contribute to the greater body dissatisfaction observed among samples of girls (Knauss et al. 2007).

In contrast to internalization of media-ideals, relatively little research has explored how specific peer experiences have been implicated in appearance-ideal internalization and body dissatisfaction of adolescents. The greater value placed on appearance by peers presumably reinforces commitment to idealised images and, in turn, these internalized representations negatively impact body image satisfaction (Clark and Tiggemann 2006; Thompson and Stice 2001).

To date, little research has examined the internalization of appearance ideals as a mediator of peer experiences and body image. Keery et al. (2004) reported that internalization partially mediated the relationship between peer influence and body dissatisfaction while Shroff and Thompson (2006) revealed that internalization did not mediate between peer influence and body dissatisfaction, although internalization did mediate between peer influence and drive for thinness, self-esteem and bulimic symptoms. An important limitation of these studies was that they only included samples of adolescent girls; thus, an important gap remains in our understanding of the mediational role of internalization among adolescent boys. Jones (2004) investigated internalization as a mediator for boys, but not for girls, and found no mediating role for ideal body internalization, while in contrast Jones et al. (2004) provided evidence that internalization of appearance ideals mediates the relationship between appearance conversations with friends and body dissatisfaction for both boys and girls. Thus, it appears that this psychological process of internalization warrants further investigation, both as a direct predictor of body dissatisfaction and as a mediator that links peer experiences and body dissatisfaction. The current study seeks to address the gap in the existing literature by examining the mediational role of internalization among both boys and girls.

Body Mass

Models that take account of socio-cultural factors only go so far in understanding the development of body image dissatisfaction. An individual's body mass has also emerged as a central influence. Obesity and excess weight are stigmatised in western cultures, with larger body shapes regarded as socially undesirable for both adolescent girls and boys (Grogan 2006, 2008). Accordingly, cross-sectional and

longitudinal research has empirically evidenced a positive correlation between elevated levels of body mass and body dissatisfaction in adolescent males and females (McCabe et al. 2009; Chen et al. 2007; Thompson et al. 2007).

Greater deviation from the ultra-thin ideal has been proposed to account for the increased body dissatisfaction experienced by girls with elevated body mass, as girls with greater adiposity may experience more pressure to be thin from their social environment. Stice and Whitenton (2002) found that girls who perceived pressure to be thin from their social environment demonstrated a risk of body dissatisfaction onset that was four times greater than girls who perceived low levels of pressure to be thin. However, it is not merely perceived pressure that accounts for the relationship between increased body mass and body dissatisfaction. Prospective research has demonstrated that elevated adiposity can directly influence body dissatisfaction even in the absence of perceived pressure to be thin through negative evaluation of one's body. Adolescent girls with increased body mass who perceived only minimal pressure to conform to the physical ideal evidenced a risk of developing body dissatisfaction that was still eight times that of average weight girls (Stice and Whitenton 2002). Thus, there appears to be both direct and indirect pathways through which elevated body mass influences body dissatisfaction among girls.

The relation between body mass and body image satisfaction for adolescent males is more complex than for adolescent girls. Among boys, body dissatisfaction is reflected in a desire for some to lose weight, and a desire for others to gain weight and become more muscular (McCabe and Ricciardelli 2004). Jones and Crawford (2006) found that BMI was inversely related to muscularity concerns, with boys of lower body weight demonstrating the most concern for muscular enhancement. This is in contrast to the situation for girls, whose body dissatisfaction increased with higher body weight, suggesting that gender moderates the relation between body mass and body dissatisfaction.

The experience of peer criticism and teasing also appears to be closely related to body mass and level of adiposity. Children and adolescents with greater adiposity typically receive greater appearance criticism and weight teasing (Eisenberg et al. 2006; Tyler et al. 2009; Thompson et al. 2007). Previous research has found, however, that when detailed measures of weight and shape are applied to peer teasing, boys reported significantly greater teasing and more negative appearance-related commentary than girls (Jones et al. 2004; Vincent and McCabe 2000). Moreover, it is underweight adolescent boys who most frequently encounter criticism from peers in relation to their underdeveloped physique (Jones and Crawford 2006). Internalized images of ultra thin females and muscular males may lead to unrealistic expectations of body shape among adolescents, which

may account for some teasing of average weight girls and boys who deviate from cultural ideals (Eisenberg et al. 2003). It could be hypothesised that the impact of increased body mass on body dissatisfaction is both direct (experienced as a direct devaluation of one's body image) and indirect (filtered through internalization of appearance ideals). Thus, in addition to exploring internalization as a mediator between peer influences and body dissatisfaction, the present study sought to investigate internalization as a mediator between body mass and body dissatisfaction.

The Present Study

Prior studies have provided evidence that body mass, peer appearance conversations, peer criticism and internalization influence body dissatisfaction, although the nature of these associations appears to be different for boys and girls. One limitation with much of this research is that boys and girls have been studied separately and thus the opportunity to explore how gender moderates these associations has been largely lacking. The present study improves upon this research by testing whether and how gender moderates the predictive relation of body mass, peer variables and internalization to body dissatisfaction among adolescent boys and girls. Only through carrying out an explicit test of the gender-by-risk factor interaction is it truly possible to determine whether such variables are associated with different levels of risk for girls versus boys (Baron and Kenny 1986). An additional shortcoming in the existing literature concerns the contradictory findings evidenced with regard to the mediating role of internalization among biological and socio-cultural variables, and body dissatisfaction. Thus, the current study extends previous literature by testing internalized appearance ideals as a mediating psychological process in the development of body dissatisfaction for both boys and girls.

In summary, the main purpose of the present study was to examine the contributions of body mass, peer appearance conversations, peer appearance criticism and internalization of appearance ideals to body image dissatisfaction of male and female adolescents, and to explore whether gender moderated these socio-cultural and biological risk factors. Internalization of appearance ideals was also evaluated as a mediating factor in the development of body dissatisfaction. Based on previous research, it was hypothesised that girls would demonstrate higher rates of body dissatisfaction than boys (Tremblay and Lariviere 2009; McCabe et al. 2009). Boys and girls were also hypothesised to differ on internalization of appearance ideals, appearance conversations, and peer appearance criticisms (Hypothesis #1). However, given the inconsistency of findings in the previous literature, the direction of these differences was unspecified.

Consistent with previous studies it was hypothesised that biological (BMI), peer-related variables (peer appearance conversations and criticism) and internalization would predict body dissatisfaction among boys and girls, and the predictive effects of these variables on body dissatisfaction would be moderated by gender (Hypothesis #2). In addition, internalization was hypothesised to mediate the relationship between BMI and body dissatisfaction, and between peer experiences and body dissatisfaction for both boys and girls (Hypothesis #3). Thus, the present study contributes to the existing research on adolescent body dissatisfaction by investigating gender specific risk factors associated with body image dissatisfaction and the role of internalization as a mediator between both peer experiences and BMI and body dissatisfaction.

Method

Participants

Two hundred and thirty-nine students from secondary school Years One to Six participated in the study. One hundred and eleven boys aged between 12 and 18 years ($M = 15.76$, $SD = 1.17$) and 129 girls aged between 12 and 19 years ($M = 16.23$, $SD = 1.46$) were recruited from two coeducational secondary schools, one located in Dublin city ($N = 122$), the other located in a large town in the centre of Ireland ($N = 117$). The girls in the sample were significantly older than the boys ($t = -2.75$, $p < 0.01$). The majority of the participants were aged between 15 and 17 years. Ten percent of the sample was aged between 12 and 14 years of age ($n = 25$), 78% was between 15 and 17 years of age ($n = 186$) and 12% was between 18 and 19 years of age ($n = 28$). All participants were White.

Measures

Body Mass Index

Participants' self-reported height and weight were recorded. Body mass index was subsequently computed using the formula $BMI = \text{kg}/\text{m}^2$. Previous research has confirmed that self-reported weight and height are reliable and valid measures of actual weight and height (Field et al. 2001; Paradis et al. 2008) and similar studies have also relied upon this method of measuring BMI (Mellor et al. 2008; Bardone-Cone et al. 2008).

Body Image Dissatisfaction

The Contour Drawing Rating Scale (CDRS; Thompson and Gray 1995) was used to measure body image. The scale

comprises nine male and nine female contour drawings numbered from one to nine, which increase incrementally in size from severely underweight to extremely obese. Participants select the figure that most closely approximates their current body (current figure) and the figure that they would most like to resemble (ideal figure). The discrepancy between these two responses (Current—Ideal) is conceptualised as the degree of body dissatisfaction. For example, a participant who identified her current body as a 6 and ideal figure as a 4 is awarded a body dissatisfaction score of 2. Alternatively, an individual who indicates a current body score of 2 and an ideal figure of 5 attains a body dissatisfaction score of minus 3, reflecting a desire to gain weight. Thompson and Gray (1995) demonstrated good 1-week test–retest reliability in a sample of 32 female university students ($r = 0.78$). In addition, they established concurrent validity by examining correlations between current figure ratings and body mass index ($r = 0.59$) and between self-reported weight and current figure ratings ($r = 0.71$). Thompson (1993) also established concurrent validity by examining the degree of correspondence between BMI and current figure ratings for males ($r = 0.72$) and females ($r = 0.76$). The present sample also evidenced satisfactory concurrent validity for self-selected current figures and BMI (girls, $r = 0.59$; boys, $r = 0.65$) and between self-ratings and self-reported weight (girls, $r = 0.66$; boys, $r = 0.57$).

Appearance Conversations with Friends

A five-item scale developed by Jones et al. (2004) measured how often adolescents reported talking about expectations for their bodies and appearance enhancements with friends. Items included, “My friends and I talk about what we would like our bodies to look like” and “My friends and I talk about what we can do to always look our best”. Responses to each item range from never (1) to very often (5). Higher scores indicate more frequent conversations with peers regarding appearance. The concurrent validity and internal reliability (girls, $\alpha = 0.85$; boys, $\alpha = 0.83$) of the scale was confirmed in previous research (Jones 2004; Clark and Tiggemann 2006, 2008). Cronbach's alphas in the present study were satisfactory for both boys ($\alpha = 0.84$) and girls ($\alpha = 0.89$).

Peer Appearance Criticism

A seven-item scale, also developed by Jones et al. (2004) assessed the frequency with which adolescents experienced teasing from male and female peers about their body size and shape. Four items measured general criticism about the body e.g. “Boys laugh at me or make fun of me because of my body” and “Girls tease me or make fun of the size or shape of my body”. These items tapped into criticism from

both same-sex and opposite-sex peers. Three remaining items addressed criticism about the gender specific concerns of thinness for girls (e.g. “Boys say that I would look better if I were thinner”) and muscularity for boys (e.g. “Girls say I should build up my muscles”). Based on a 5-point likert scale, responses range from never (1) to very often (5). Higher scores suggest greater perceived teasing about body shape and size. Former research (Jones et al. 2004) established the internal consistency of the Peer Appearance Criticism scale for boys ($\alpha = 0.80$) and girls ($\alpha = 0.84$). In the present study, Cronbach’s alpha was satisfactory (boys, $\alpha = 0.88$; girls, $\alpha = 0.87$).

Internalization of Appearance Ideals

The Sociocultural Internalization of Appearance Questionnaire-Adolescents (SIAQ-A; Keery et al. 2004) consists of five items that measure internalization of socially defined ideals of attractiveness (e.g. “I would like my body to look like the bodies of people in the movies” and “Reading magazines makes me want to change my appearance”). Responses were scored on a 5-point likert scale ranging from definitely disagree (1) to definitely agree (5). Higher scores reflect greater internalization of appearance ideals. Internal consistency of the scale was confirmed in US and cross-cultural adolescent samples with Cronbach’s alpha ranging from 0.83 to 0.92 (Keery et al. 2004a, b). These authors also established convergent validity by measuring the degree of correspondence between appearance ideal internalization and body dissatisfaction and between internalization and bulimic behaviours ($r = 0.40$ – 0.60). In the present study, Cronbach’s alpha was satisfactory (boys, $\alpha = 0.87$; girls, $\alpha = 0.93$).

Procedure

Ethical approval to conduct the study was obtained from the School of Psychology Ethics Committee within the university. School principals were contacted and permission to access students was requested. School principals were informed about the aims of the study and a copy of the proposed questionnaires, consent form and information sheet were supplied. With the agreement of the school principal and teachers, information letters and consent forms were sent to the parent(s) or guardian(s) of students in selected classes. The nature and aims of the study were explained, and parents were requested to sign the consent form to indicate their willingness to allow their child be invited to participate in the study. Adolescents who returned signed consent forms were assembled together and given an information leaflet explaining the nature of the study and what participation would entail. The voluntary nature of the study was highlighted and students were

assured that no penalties would be incurred if they chose not to partake or if they chose to withdraw from participation. The adolescents were then given the opportunity to ask any questions they had regarding the study. Willing participants were required to complete a consent form.

Adolescents were assessed as a group during a regularly scheduled class. Prior to the dissemination of questionnaires, the researchers reiterated the confidentiality and anonymity of individuals’ responses. A questionnaire booklet comprising measures of body dissatisfaction, internalization of appearance ideals, peer appearance conversations, peer appearance criticism and height and weight, was administered. Males and females received separate questionnaires containing gender specific measures. Following the completion of questionnaires, participants were debriefed. Students received a research information sheet providing details of relevant support organisations and contact details of the researchers, in the event of additional information or help being warranted.

Results

In the analyses below, a series of independent t-tests was used to examine gender differences across the variables (Hypothesis #1). Following this, correlational analyses among the variables and multiple regression analyses are presented, in order to test Hypotheses 2 and 3. The first regression aimed to evaluate the contributions of peer variables, internalization and BMI to body dissatisfaction among boys and girls. Given the broad age range in the sample, age is controlled for and the moderating effect of gender was also tested using gender interaction terms as predictors (Hypothesis #2). Finally, a regression analysis was used to determine whether internalization mediated the relationship between body mass and body dissatisfaction and peer variables and body dissatisfaction (Hypothesis #3).

Gender Differences

Descriptive statistics for body dissatisfaction, peer appearance conversations, peer appearance criticism, internalization and body mass by gender are presented in Table 1. Independent samples *t*-tests were performed to examine gender differences on body dissatisfaction, internalization of appearance ideals, appearance conversations with friends, peer appearance criticism and BMI. Significant gender differences were observed on all measures apart from peer appearance criticism, which did not significantly differ between males and females ($t(230) = -0.69, p > 0.05$). Females scored significantly higher than males on body dissatisfaction, with 80.8% of girls reporting a desire to alter their body size as compared with 54.8% of boys.

Table 1 Means, standard deviations and *t* values for measures by gender

Variable	Girls		Boys		<i>t</i>
	<i>M</i>	SD	<i>M</i>	SD	
Body dissatisfaction ^a	1.36	1.45	0.20	1.05	-7.16***
Internalization of appearance ideals	16.16	6.45	10.08	4.67	-8.40***
Appearance conversations with friends	15.43	4.89	8.85	3.83	-11.66***
Peer appearance criticism	9.65	3.24	9.36	3.24	-0.69
Body mass index	21.32	2.92	22.81	4.05	2.95**

** $p < 0.01$, *** $p < 0.001$

^a One-tailed test

Females also reported more appearance conversations with friends and endorsed greater internalization of appearance ideals. In addition, males demonstrated greater BMI than females; however, the mean BMI (22.81) was similar to levels reported in other studies of adolescent boys (22.49 and 22.84 reported by Jones and Crawford 2005 and Presnell et al. 2004, respectively).

Prediction of Body Dissatisfaction Among Boys and Girls

In order to examine the relationships between body dissatisfaction and internalization of appearance ideals, peer variables (appearance conversations and criticism), BMI and age, Pearson's correlations were computed for males and females (Table 2). Among the girls, body dissatisfaction was significantly related to internalization of appearance ideals, appearance conversations with friends, peer appearance criticism, and BMI. Age was not found to correlate significantly with body dissatisfaction. For the boys, significant relationships emerged between body dissatisfaction and internalization, peer appearance criticism and BMI. Age and appearance conversations with friends, however, were not significantly related to male body dissatisfaction. These correlations are relevant to the exploration of internalization of appearance ideals as a mediator in that they provide evidence for the relationships between body dissatisfaction, and peer influence variables and BMI.

In order to test Hypothesis 2, a hierarchical regression analyses was used to evaluate the contributions of appearance conversations with friends, peer appearance criticism, internalization of appearance ideals and BMI to the prediction of body dissatisfaction, controlling for the effects of age in the combined sample of boys and girls. In the hierarchical model, age was entered alone at the first step, followed by the remaining variables at Step 2 (Table 3). Age did not explain a significant proportion of variance in body dissatisfaction scores nor did it emerge as a significant predictor of body dissatisfaction. The remaining independent variables entered into the regression equation

accounted for 45.8% of variance in body dissatisfaction, with internalization of appearance ideals ($\beta = .324$, $t = 4.39$, $p < .001$), BMI ($\beta = .291$, $t = 4.93$, $p < .001$), peer appearance criticism ($\beta = .207$, $t = 3.32$, $p < .01$) and appearance conversations with friends ($\beta = .192$, $t = 2.71$, $p < .01$) providing unique prediction.

To test whether gender moderated any effects of the peer, biological and psychological variables, interaction terms were computed for gender and each of the independent variables. These interaction terms were then entered at Step 3 in the hierarchical model outlined above (Table 3). Results indicated a significant Gender x BMI interaction ($\beta = -.275$, $t = -2.784$, $p < .01$) in the prediction of body dissatisfaction. Boys were more likely than girls to be satisfied with their bodies (45.2 vs. 19.2%). The majority of girls who were dissatisfied with their bodies indicated a desire for a body size smaller than their current body (70.2%) rather than a bigger body size than their current body (10.6%). In contrast, body dissatisfaction for boys involved desire for both bigger (23.7%) and smaller body sizes (31.2%), relative to current size. All of the overweight girls revealed a desire for smaller bodies, in contrast to 78.6% of the overweight boys. Sixty percent of the average weight boys were satisfied with their bodies, and 30.9% of them wanted to be bigger. In contrast, 24.4% of the average weight girls were satisfied with their bodies, and only 6.4% of average weight girls wanted a body size bigger than their ideal. These patterns indicate that average weight girls reflect a desire for smaller body size, while average weight boys are either satisfied with their bodies or want to be bigger. The nature of this interaction between gender and BMI and its association with adolescents' body dissatisfaction is illustrated in Fig. 1. No other significant interactions with gender were found.

Internalized Appearance Ideals as a Mediator of Body Dissatisfaction Among Boys and Girls

It was hypothesised that internalization of appearance ideals would mediate between the peer variables and body

Table 2 Correlations between measures for adolescent girls and boys

Variable	1	2	3	4	5	6
1. Body dissatisfaction	–	.329**	.077	.550**	.560**	–.097
2. Internalization of appearance ideals	.457**	–	.326**	.528**	.297**	.010
3. Appearance conversations with friends	.251**	.573**	–	.255**	.199	.111
4. Peer appearance criticism	.472**	.290**	.055	–	.421**	.120
5. Body mass index	.571**	.223*	.010	.411**	–	.177
6. Age	–.052	.113	.161	–.140	.039	–

Note: Girls (below the diagonal), $n = 129$; boys (above the diagonal), $n = 111$

* Correlation is significant at the 0.05 level (2-tailed)

** Correlation is significant at the 0.01 level (2-tailed)

Table 3 Summary of hierarchical regression analysis for variables predicting body dissatisfaction in adolescent girls and boys (beta coefficients)

Variable	Step 1	Step 2	Step 3
Age	.015	–.087	–.071
Appearance conversations with friends		.192**	.254*
Peer appearance criticism		.207**	.213*
Internalization of appearance ideals		.324***	.294**
BMI		.291***	.522***
Gender \times Age			–.019
Gender \times Appearance conversations with friends			–.044
Gender \times Peer appearance criticism			–.020
Gender \times Internalization of appearance ideals			.012
Gender \times BMI			–.275**
R^2	.000	.458***	.488
R^2 change	.000	.457***	.031

* $p < .05$, ** $p < .01$, *** $p < .001$

dissatisfaction, and between BMI and body dissatisfaction (Hypothesis 3). Preconditions for testing mediation (Baron and Kenny 1986) were met for appearance conversations with friends and peer appearance criticism as each predictor variable was related to the measures of body dissatisfaction and internalization of appearance ideals, and internalization (the postulated mediator) also emerged as a significant predictor of body dissatisfaction. BMI and age, however, were not evaluated because they did not emerge as significant predictors of internalization and therefore did not meet the requirement for testing mediation. A hierarchical regression model was used in which the peer variables were entered at the first step, followed by internalization of appearance ideals (Step 2). Table 4 shows the beta coefficients at each stage as well as the change in the variance. Among adolescents, the peer variables explained a significant proportion of variance (32.1%) in body dissatisfaction scores. In Step 2,

internalization of appearance ideals was added, which further increased the variance explained (by 6.9%) and reduced the effect of the peer variables. Sobel's test (Preacher 2001) revealed a significant decrease in beta values for peer appearance criticism after internalization of appearance ideals was added [$z(2, 226) = 4.59, p < .001$], indicating statistically significant mediation. Mediation effects were also significant for appearance conversations with friends [$z(2, 231) = 5.81, p < .001$], which was reduced to non-significance after the addition of internalization. This pattern of results is consistent with the prediction that peer experiences affect body dissatisfaction, through promoting internalization of appearance ideals.

In summary, for girls and boys combined, appearance conversations with friends, peer appearance criticism, BMI and internalisation of appearance ideals made direct contributions to body image dissatisfaction. Gender moderated the relationship between body mass and body dissatisfaction, indicating that body mass exerts a differential risk for boys versus girls. Furthermore, internalization mediated the relationship between appearance conversations with friends and body dissatisfaction and peer appearance criticism and body dissatisfaction.

Discussion

The present study aimed to explore the contributions of peer appearance contexts, internalized appearance ideals and body mass to body dissatisfaction of male and female adolescents and to evaluate the mediational role of internalized appearance ideals. A further aim of the research was to examine gender as a moderator of these socio-cultural and biological risk factors for body dissatisfaction. The findings contribute to the growing literature on body dissatisfaction by revealing psychological and socio-cultural risk patterns for adolescent males and females. In support of our first hypothesis, girls demonstrated greater body dissatisfaction than boys. However, it should be noted

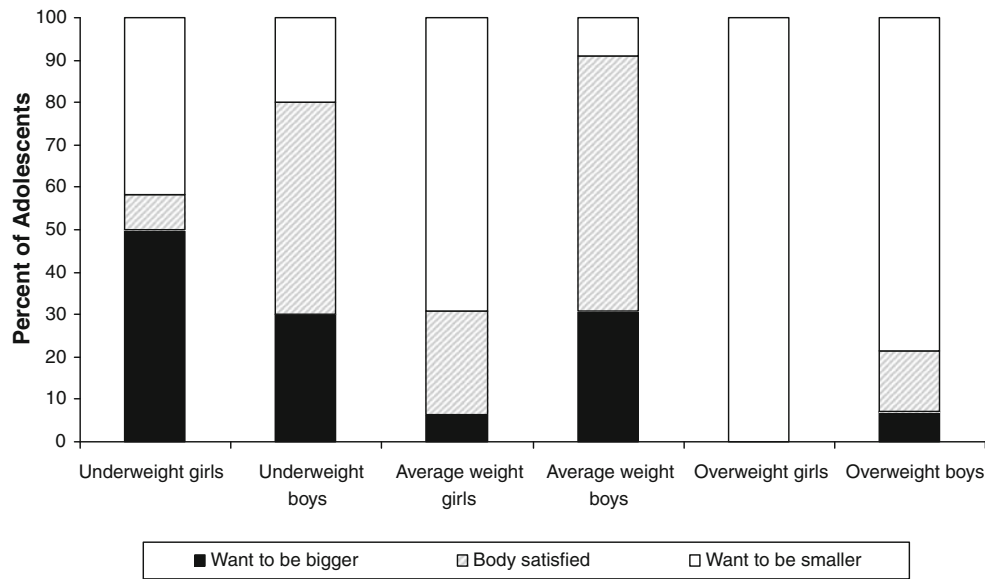


Fig. 1 Body dissatisfaction by BMI classification for girls and boys

Table 4 Summary of hierarchical regression analysis exploring internalization as a mediator of body dissatisfaction in adolescent girls and boys (beta coefficients)

Variable	Step 1	Step 2
Appearance conversations with friends	.326***	.107
Peer appearance criticism	.423***	.320***
Internalization of appearance ideals		.365***
R ²	.321	.390***
R ² change	.321	.069***

* $p < .05$, ** $p < .01$, *** $p < .001$

that male concerns were not insubstantial, with just over half of male participants expressing a desire to alter their shape or size. Gender differences were also evident with females reporting more frequent appearance conversations with friends and greater internalization of appearance ideals than males. The results support those of previous research, which has also revealed a greater propensity for girls to talk about appearance with friends than boys (Jones et al. 2004; Murray et al. 1995). These findings also suggest that females may be more vulnerable to the social context of appearance conversations and perceive greater pressure to conform to cultural ideals endorsed in the media than their male counterparts.

Notwithstanding these differences however, there was no gender difference in peer appearance criticism. This finding resonates with other research that has reported that both males and females regularly engage in teasing about appearance (Eisenberg et al. 2003; Mooney et al. 2009). Taken together, these findings suggest that while girls are more likely than boys to talk about appearance with friends

and be dissatisfied with their bodies, being criticised about appearance by peers is an inextricable part of adolescent life for both boys and girls.

The hypothesized relationships between body dissatisfaction and body mass, appearance conversations with friends, peer appearance conversations and internalized appearance ideals were confirmed for girls and boys. Body mass emerged as a potent predictor of body dissatisfaction, highlighting the importance of investigating individual biological contributions to body dissatisfaction alongside socio-cultural factors. These findings confirm previous research that has found elevated body mass directly impacts body dissatisfaction through negative evaluation of one’s own body (Thompson et al. 2007; Presnell et al. 2004). As predicted, a significant interaction between gender and BMI emerged, indicating that body mass differentially influenced body dissatisfaction among boys and girls. The present findings indicated that adolescent boys of average weight were most content with their physique with just under a third expressing a desire to be bigger and less than 10% indicating a desire for a smaller body size. In stark contrast, more than three quarters of adolescent girls within the normal body mass range experienced body dissatisfaction, with nearly all desiring a smaller body size relative to their current figure. Furthermore, overweight boys and girls experienced heightened body dissatisfaction with all of the overweight girls conveying a desire to lose weight as compared with 79% of overweight males. These findings imply that while boys of average weight are moderately happy with their physical appearance, adolescent girls are most satisfied with their bodies’ at below-average levels of adiposity.

Internalization of appearance ideals also emerged as a significant predictor of body dissatisfaction among girls and boys. This finding confirms previous research supporting such a relation among male (Knauss et al. 2007; Halliwell and Harvey 2006; Jones 2004) and female adolescents (Knauss et al. 2007, 2008; Chen et al. 2007; Jones et al. 2004) but contradicts previous studies evidencing no such relationship among a co-ed sample of boys and girls (Bearman et al. 2006; Presnell et al. 2004). Contrary to our predictions, gender did not moderate the relationship between internalized appearance ideals and body dissatisfaction, indicating that such self-reported internalization of appearance ideals does not exert differential risk for boys versus girls. Accordingly, males and females appear to internalize socio-cultural messages about appearance ideals and feel pressure to conform to such ideals.

In addition, peer appearance criticism emerged as an important predictor of body dissatisfaction for both males and females, highlighting the centrality of such negative peer experiences for body dissatisfaction during adolescence. The active participation of males and females in appearance-related teasing with peers impacts upon body dissatisfaction as a direct consequence of experiencing negative evaluation of one's appearance by another (Eisenberg et al. 2006; Jones et al. 2004). Appearance conversation with friends also significantly contributed to body dissatisfaction. Engaging in appearance related conversations with friends leads to heightened attention to appearance issues, which gives rise to the creation and adoption of appearance norms and ultimately encourages evaluation of one's own physical appearance relative to others, thereby impacting body dissatisfaction (Clark and Tigge-mann 2006; Jones 2004). Contrary to our hypothesis, gender did not moderate the effects of either of the peer variables, indicating that the development of body dissatisfaction develops through similar peer experiences among boys and girls.

The hypothesized mediated relationships between the peer variables and body dissatisfaction were confirmed. These findings support prior cross-sectional research on adolescent males and females, which found that internalisation of appearance ideals mediated the relationship between appearance conversations with friends and body dissatisfaction, and peer appearance criticism and body dissatisfaction (Jones et al. 2004). The peer group is, thus, clearly operating as an important vehicle for the transmission of socio-cultural messages of appearance ideals. The greater value placed on appearance during everyday conversations with peers, particularly those that involve teasing about appearance, presumably reinforces commitment to idealised images and, in turn, these internalised representations negatively impact body satisfaction (Jones 2004). In line with this proposal, Shroff and Thompson (2006) found

that girls' experience of perceived media pressure was reinforced by peer messages about the value of thinness. Body dissatisfaction is, thus, proposed to develop through peer reinforcement of cultural appearance ideals in everyday conversations. The mediated relationship between BMI and body dissatisfaction could not be tested, as BMI did not emerge as a predictor of internalization among this sample of adolescents. This finding is similar to that reported by Jones et al. (2004) that BMI directly predicted body dissatisfaction for boys, but the mediating role of internalization could not be determined.

Limitations & Directions for Future Research

It is important to consider the limitations of the present study when interpreting the findings. The implementation of a correlational cross-sectional research design limits the causal conclusions that may be drawn from the present study. The prospective contributions of internalized appearance ideals, body mass index and peer context variables to the development of body dissatisfaction cannot be assessed in a study comprising one-time measurements. Utilising longitudinal study designs in future research is advised to help overcome this problem. An additional limitation of the study is its sole reliance on self-reported measures. While adolescents may be viewed as the most favourable source of their personal experiences (Edelbrock et al. 1985), additional information obtained from peers and family may be useful to validate perceived experiences within the peer culture. Alternative methods such as qualitative interviews or focus groups performed with adolescents may facilitate a more in-depth understanding of the peer experiences and appearance pressures faced by boys and girls in an everyday context.

Although the silhouette measure of body dissatisfaction utilised in the present study has been widely used with male and female adolescent samples in both the Eastern (Chen et al. 2008) and Western hemisphere (Shroff and Thompson 2006), it has been argued that this measure confounds body fat level with muscularity (Frederick et al. 2007). This may be of theoretical consequence for males who are considered to aspire to a muscular mesomorphic ideal characterised by broad shoulders and a well developed chest (Grogan 2008). It should be noted that, while this measure does not distinguish between body fat and weight, it does differentiate between those who express dissatisfaction with being too large versus too small, providing an advantage over many of the other commonly used measures of body dissatisfaction that typically assess dissatisfaction with several body parts but fail to indicate the direction of discontent. Irrespective of this, owing to the different psychological significance of these two very different sources of body size for males, future research

should incorporate a measure that allows males to separately manipulate muscularity and body fat, thereby allowing a more detailed and accurate understanding of male body dissatisfaction to emerge (Frederick et al. 2007).

The present study has other potential limitations that need to be considered alongside the recommendations for future research. Combining the broad age range of the sample may be considered a methodological limitation owing to the inability to detect risk factors that may potentially differ across development. However, it should be noted that age was controlled for during statistical analyses to overcome this issue and no significant effects emerged. The sample was also homogeneous in terms of ethnicity, which limits the generalizability of our results. Future studies should examine biological and socio-cultural contributors to body dissatisfaction among diverse ethnic groups. It should also be acknowledged that while this study was specifically focused on peer variables, parents, romantic partners and the mass media represent significant influences in the lives of adolescents. Ongoing research on body dissatisfaction would benefit from considering how psychological processes such as internalization also mediate the influence of these proximal and distal socialisation agents. Finally, the direction of effects of sociocultural influence on body dissatisfaction warrants serious consideration. Peer experiences giving rise to internalization and body dissatisfaction is an established pathway; however, reciprocal relationships are also possible whereby, adolescents who internalize body ideals are more likely to engage in appearance related conversations with their friends or select friends who are predisposed to discussing these issues.

In conclusion, body dissatisfaction is prevalent in Irish adolescents, particularly among girls who typically aspire to an ultra-thin appearance ideal. The current findings provide support for the assertions that BMI, internalisation of appearance ideals, and peer experiences contribute to body dissatisfaction among Irish adolescent boys and girls. Internalized appearance ideals also mediated the relationship between appearance conversations with friends and body dissatisfaction, and peer appearance criticism and body dissatisfaction among boys and girls. Moreover, gender was found to moderate the relationship between body mass and body dissatisfaction, but not between peer variables and body dissatisfaction. Thus, the present study contributes to the existing research on adolescent body dissatisfaction by providing a more nuanced understanding of gender specific factors associated with body image dissatisfaction and highlighting the principal role peer experiences play in the development of body dissatisfaction for both boys and girls. Understanding the predictors and psychological mechanisms underpinning body dissatisfaction for males and females may also enable more timely

detection and thus quicker intervention with those at risk of body-related issues.

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