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What can I do with my body? Boys and girls facing body dissatisfaction

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ABSTRACT

The aim of this study is to investigate the role of body dissatisfaction (BD) – conceived here as predicting, predicted and mediating variable – in relation to media influence, body mass index (BMI) and body modification strategies among adolescents, with particular attention to gender differences. Specifically, we investigate, through a multivariate model, the direct and mediated effect of internalization and pressure to conform to aesthetic ideals and BMI on engagement in body modification behaviours, namely eating problems, attitudes toward cosmetic surgery, body art and physical activity. A questionnaire designed to assess all these dimensions was administered to 843 Italian adolescents aged between 15 and 18 years. The findings confirm the available evidence on BD as predicted by a number of sociocultural and personal variables, and as predictive of adolescents' bodily attitudes and behaviours. Gendered differences in behaviours considered as 'ways out' from discomforting feelings about physical appearance are discussed.

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Body dissatisfaction; media influence; eating problems; cosmetic surgery; body art

Introduction

One of the most consistent findings in international research on the concerns of new generations about their body is the increasing prevalence of weight and shape-related anxiety among adolescents (Knauss, Paxton, & Alsaker, 2008). Adolescence is a risk stage in the development of body dissatisfaction (BD), which could be defined as a negative evaluation of body appearance or of specific body features (Stice & Shaw, 2002). BD has proved to be associated with extreme behaviours such as strong dieting, self-induced vomiting and cosmetic surgery, but also with other activities aimed at 'changing' body shape, such as body art and sport (Grogan, 2006; Neumark-Sztainer, Paxton, Hannan, Haines, & Story, 2006).

Gender differences have been widely described with respect to BD, with females reporting higher levels of dissatisfaction than males (e.g. Ata, Ludden, & Lally, 2007). However, it is increasingly clear that boys are also vulnerable to poor body image (e.g. McCabe & Ricciardelli, 2003). In girls, the desire to lose weight is generally referred to as the 'drive for thinness', whereas in boys, the desire to enhance their musculature is referred to as the 'drive for muscularity' (Pritchard & Cramblitt, 2014). Research suggests that if sociocultural influences are predictive of the drive for thinness in females, similar influences may play a role in the drive for muscularity among males, leading them to engage in high-risk behaviours such as an early use of steroids, ephedrine and dieting (Dakanalis et al., 2015; McCabe & Ricciardelli,

2003). Nevertheless, although the deleterious impact of BD has been well-established, particularly for girls, gender differences in body modification strategies as a reaction to BD are less well understood.

Our study aims to explore if and to what extent a set of behaviours and activities can be conceived as *ways out* from adolescents' perceived expectations about their body. As Heatherton and Baumeister (1991) early suggested, a behaviour can be considered as a way to escape from self-awareness when facing a comparison of oneself against high standards or ideals. In a similar way, we assume that a set of problematic as well as non-problematic behaviours and attitudes are reactions to ideals of beauty and thinness prompted by media messages, and that these behaviours and attitudes may differ from boys to girls.

Factors predicting, and predicted by, BD

Predictors of body dissatisfaction

According to a sociocultural approach (Hargreaves & Tiggemann, 2004; Ricciardelli & McCabe, 2003) the current standards of society overly emphasize thinness as a widely accepted ideal, but at the same time, this ideal is difficult to achieve. Research conducted on the media effects indicates that long-standing exposure to ideal beauty images as well as the degree of internalization of thin-ideal body standards and perceived pressure from the media can lead teenagers to higher levels of BD (Cattarin, Thompson, Thomas, & Williams, 2000; van den Berg et al., 2007), thus influencing their daily life and individual well-being, especially for girls (Thompson & Stice, 2001; Thompson, van den Berg, Roehrig, Guarda, & Heinberg, 2004). In general, girls and women are exposed to a greater sociocultural pressure to attain ideals of physical and sexual attractiveness, thus having higher body shame and body surveillance than boys and men (Swami & Furnham, 2008). The Objectification theory (Fredrickson, Roberts, Noll, Quinn, & Twenge, 1998) is one of the most used theoretical frameworks for understanding these dynamics (Moradi, 2010). The theory suggests that gender socialization and sexual objectification experiences define femininity through bodies and appearance; girls internalize cultural standards of attractiveness as their own, and they objectify themselves or take on an observer's perspective upon their own body. This theory has been extended across gender and cultural groups that are exposed to dominant cultural messages (e.g. Knauss et al., 2008).

Italy is a context of particular interest to investigate sociocultural pressures on physical appearance for both boys and girls and consequent BD. Gender values and roles, as well as public spaces and cultural messages, are strongly traditional in this country, even though some changes are beginning to emerge among more educated people and young generations. This peculiar situation can be explained by demographic as well as cultural, historical and structural factors. People aged over 65 represent one-fifth of the overall population (Italy is one of the oldest populations in the world) and show particularly traditional gender norms in relation to the role of women in society (Lück, 2006). Women's participation in the labour market is much lower than in other European countries (ISTAT, 2014) and their involvement in domestic work is higher than other countries in Europe (Todesco, 2013). National media contents are strongly gendered, still assigning women either the role of housewife and caregiver in the family or sexual object (Volpato, 2011). Studies have focused on the extent to which the female body is sexualized, objectified and commodified in a manner quantitatively and qualitatively different from that of males in the main visual media of the country (e.g. Ghigi, 2013). Matera and Stefanile (2012) argue that BD is very common, especially among Italian girls. In a sample of 298 Italian adolescent girls, 56% of girls described themselves as dissatisfied with their bodies. Similarly, in last decades, the muscularity of male body representations in the Italian media has dramatically increased and these portrayals present an extremely, and largely unattainable, body ideal (Dakanalis et al., 2012).

Aside of media influence, another factor considered among predictors of BD is body mass index (BMI). BMI has been shown to be a major prospective risk factor for BD; it proved to be positively correlated with BD, especially in the female population (e.g. Barker & Galambos, 2003). Concerns about weight are linked to BD in males as well (Bully & Elosua, 2011; Elosua & Hermosilla, 2013); however, in assessing

BD in the male population the desire to develop muscularity is becoming increasingly relevant (Jones & Crawford, 2005; Rodgers, Ganchou, Franko, & Chabrol, 2012).

Body dissatisfaction as predictor of body modification strategies

Despite a growing literature about of the importance of sociocultural pressures in the development of BD (Rodgers, Faure, & Chabrol, 2009), a lower amount of data are available regarding how girls and boys differ in body modification strategies to face poor body image. BD is linked to dysfunctional outcomes such as maladaptive behaviour (e.g. eating problems) aimed at controlling bodily shape and weight (Neumark-Sztainer et al., 2006). At the same time, it is associated with other means of body modifications such as cosmetic surgery, body art and physical activity (Cegolon et al., 2010; Henderson-King & Henderson-King, 2005; Karupiah, 2013).

The relationship between BD and eating disorders is strong; there is evidence that BD represents, among other variables, a risk factor in the recourse to dangerous restrictive dieting and in the occurrence of bulimic symptoms (Polivy & Herman, 2002; Stice, Marti, & Durant, 2011). Although the incidence of eating problems among boys remains relatively low, rates of eating disordered behaviour among boys appear to be increasing (Ricciardelli & McCabe, 2004).

BD has also been proved to be a predictor of attitudes and experiences of body art. Some authors (e.g. Cegolon et al., 2010) assume that gender, dissatisfaction with physical appearance and positive attitudes toward piercing or tattoos were associated with having or desiring body modifications. Other studies suggested that body art is more common among females (Carroll, Riffenburgh, Roberts, & Myhre, 2002), while Swami (2011) showed that both women and men had significantly lower appearance anxiety and dissatisfaction immediately after obtaining a tattoo, and significantly higher body appreciation, distinctive appearance investment, self-ascribed uniqueness and self-esteem after three weeks.

Furthermore, some findings reflect that adolescents have addressed the notion of cosmetic surgery as a possible method to reduce individual suffering associated with BD (Lunde, 2013). Cosmetic surgery is widely considered as a means of improving global self-perceptions and individuals with general low self-esteem may be more prone to this behaviour (Figueroa, 2003; Furnham & Levitas, 2012). Women with BD tend to experience a greater acceptance of cosmetic surgery, particularly if they feel they do not have socially accepted standards of beauty (Henderson-King & Henderson-King, 2005). Other works have shown that acceptance of cosmetic surgery in the female population is associated with low self-ratings of physical attractiveness (Koff & Benavage, 1998) and with negative body image experiences, since women and girls who are dissatisfied with their appearance or have greater body image disturbance consider cosmetic surgery more positively (Sarwer et al., 2005). The available evidence suggests that women report a greater likelihood of willingness to undergo various cosmetic procedures compared with men (Brown, Furnham, Glanville, & Swami, 2007; Frederick, Lever, & Peplau, 2007; Swami, Chamorro-Premuzic, Bridges, & Furnham, 2009).

In addition to the previously discussed behaviours, also physical exercise can be considered as a way to react to BD. In general, women tend to respond by dieting, while men are more likely to practice physical exercise in order to change the look of their bodies and lose weight (Grogan, 2006). Although research generally demonstrated that high motivators for physical exercise participation are weight management, appearance and BD (Kilpatrick, Hebert, & Bartholomew, 2005), research findings have still not clarified the relationship between level of satisfaction and physical activity. Some studies have shown that exercise and training can reduce BD and enhance physical self-perception and body image (Campbell & Hausenblas, 2009). On the other hand, findings from a longitudinal research (Project EAT, Eating Among Teens) revealed that high levels of body satisfaction at baseline (in junior and senior high school) were associated with healthier physical activity levels in late adolescence and young adulthood (Timlin, Pereira, Story, & Neumark-Sztainer, 2008). Nevertheless, BD has been considered a predictor of levels of physical activity, since it is generally linked to prospectively lower levels of sport (Haugen, Johansen, & Ommundsen, 2014; Neumark-Sztainer et al., 2006).

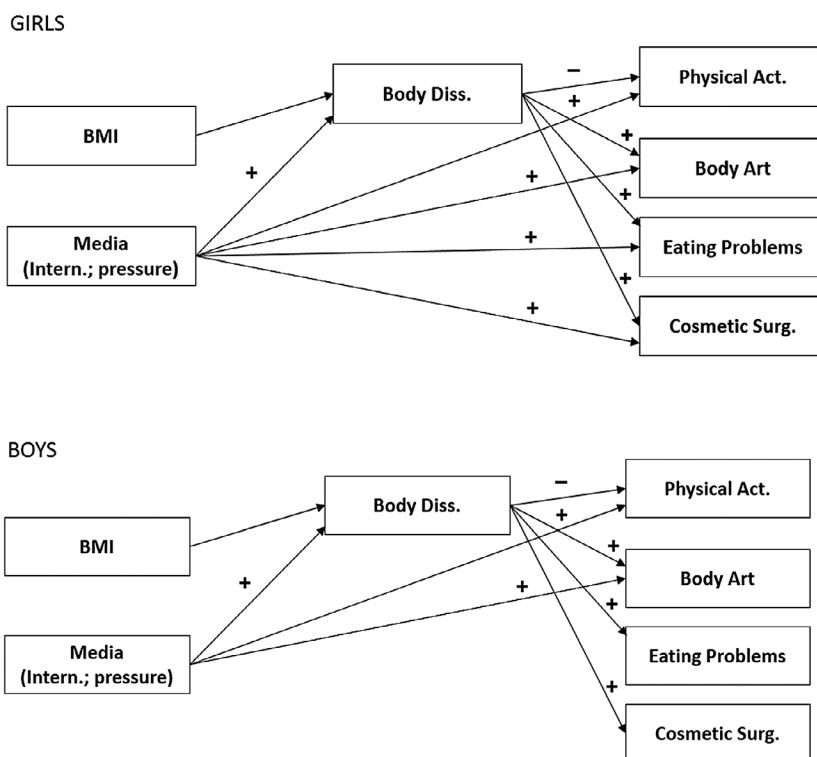


Figure 1. Proposed path model on females and males.

Note: BMI = body mass index; intern. = internalization; diss. = dissatisfaction; act. = activity; surg. = surgery.

Research aim

The framework of the current work is to provide a better understanding of the links among BD, its personal and social predictors, and bodily practices, attitudes and behaviours, focusing mainly on gender differences. As reported above, previous literature has already shown the strength of some associations between BD and media exposure, BMI, eating problems, cosmetic surgery and physical activity. However, as far as we know, a work considering all these variables in the same model has never been conducted. The main objective of this study is to examine how BD mediates the relationships among predicting variables (media internalization and pressure and BMI) and adolescents' attitudes towards body modifications (conceptualized as eating problems, attitudes towards cosmetic surgery, body art and physical activity) in a large sample of Italian girls and boys.

Our first hypothesis concerns the differences between girls and boys in the variables analysed. Specifically, in line with the literature previously described, we predict that girls will have higher values of BD, eating problems, cosmetic surgery and body art. Instead, boys will present higher scores for physical activity.

Our second hypothesis is summarized in the theoretical model presented in Figure 1. More in specific, we expect that in both girls and boys BD is predicted by BMI and media influence. As shown by the literature, media and BMI may indeed generate a sense of dissatisfaction with one's body in both genders. We also expect stronger effects of the predicting variables on BD among girls due to gender stereotyping and the objectifying treatment of the female body in the media, and to the aforementioned limitations of BMI in predicting BD among boys.

Our third hypothesis is that BD fully or partially mediates the relationship between BMI and media influence on eating problems, cosmetic surgery, body art and physical activity. BD is presumed to be

a positive predictor of all these variables, with the exception of physical activity. In the latter case, the prediction is expected to be negative, because BD can obstruct sport engagement (e.g. Haugen et al., 2014). A direct effect of the predicting variable on eating problems and cosmetic surgery is expected only in girls, because of the influence of Italian cultural models and of the internalization of thin ideals (e.g. Nerini, Matera, & Stefanile, 2014). Instead, media influence is expected to positively predict physical activity and body art in both girls and boys.

Method

Participants

The survey was part of a multi-method research project on adolescence and the media developed by the Centre for Studies on Gender and Education (University of Bologna) and the Centre for Interdisciplinary Studies on Gender (University of Trento). The investigation was conducted in Northern Italy in 2012. A probabilistic sample of high schools in the province of Trento from a wide range of socio-economic status was extracted, and all students attending the third year were involved in the research.

Our sample consists of 843 adolescents, all born in Italy: 507 girls (60.1%) and 336 boys (39.9%) aged 15–18 years (total mean age = 16.36 years, SD = .70; girls' mean age = 16.31, SD = .68; boys' mean age = 16.44, SD = .72). Overall, 466 (55.30%) of the participants attended an academic school (girls = 67.2%; boys = 32.8%), while the remaining 377 (44.70%) came from vocational or technical schools (girls = 51.5%; boys = 48.5%).

Procedures

After obtaining approval from the Institutional Review Board (IRB) of our Department, we presented the study to the principals and teachers' representatives of the schools involved in the research. Once we had the consent from the schools, the parents or guardians of participants were informed of the purpose and procedures of the questionnaire and they were asked to sign an informed consent form. All the parents/guardians gave their permission. Before proceeding to the questionnaire distribution, all students were informed that participation in the study was on a voluntary basis. They were also assured of the confidentiality and the anonymity of the collected information. All students who were asked to be involved agreed to participate.

The self-report instrument was distributed in classrooms during school hours in the presence of a researcher and in absence of the teacher. For each class, the compilation of the instrument was preceded by a brief explanation of the research and its objectives; on average, participants took between 20 and 30 min to fill in the questionnaire.

Instruments

Participants were asked to fill in a questionnaire assessing the following areas:

Body dissatisfaction: BD was assessed using one of the four subscales of the validated Body Investment Scale (BIS; Orbach & Mikulincer, 1998), namely 'body attitudes/feelings'. This scale evaluates feelings of love and approval towards the body with items such as 'I am satisfied with my appearance' (reversed) and 'I feel anger toward my body'. It consists of six items assessed on a score ranging from 1 ('Do not agree at all') to 5 ('Strongly agree'). In this study, the internal consistency (Cronbach's alpha) of the resulting BD scale scores was $\alpha = .90$ for girls and $\alpha = .86$ for boys.

Media influence toward ideal body appearance: The media influence toward ideal body appearance was investigated using two subscales of the Sociocultural Attitudes Towards Appearance Questionnaire-3 (SATAQ-3; Thompson et al., 2004). The 'Pressure' sub-scale investigates the perceived pressure to adhere to a certain body model proposed by the media (seven items, e.g. 'I've felt pressure from TV or magazines to lose weight'). The 'Internalization' subscale (nine items, e.g. 'I would like my body to look like

Table 1. Means, standard deviations and MANOVA differences for sex among study variables.

Measures	Girls		Boys		F	df
	M	SD	M	SD		
Pressure (1, 5)	2.31	.92	1.82	.79	57.17***	1
I (1, 5)	2.31	.90	1.92	.82	34.58***	1
BMI (13.42–32.45)	20.35	2.70	21.49	2.56	34.18***	1
BD (1, 5)	2.24	.95	1.65	.69	86.85***	1
EP (1, 5)	2.00	.61	1.65	.52	66.96***	1
CS (1, 3)	1.46	.66	1.15	.44	50.82***	1
Body art (1, 5)	2.73	1.52	1.89	1.29	62.48***	1
PA (1, 4)	1.82	.83	2.37	1.00	67.66***	1

Notes: I = internalization; BMI = body mass index; BD = body dissatisfaction; EP = eating problems; CS = cosmetic surgery; PA = physical activity. Numbers in parentheses represent scale range (low scores indicate low levels of the variable considered).

*** $p < .001$.

the people who are on TV') measures how much individuals adhere to the ideal body proposed by the media. All the items were assessed on a five-point Likert scale (ranging from 'Do not agree at all' to 'Strongly agree'). In this study, the internal consistency of the resulting Pressure scale was $\alpha = .86$ for girls and $\alpha = .82$ for boys, and for the Internalization scale $\alpha = .89$ for girls and $\alpha = .86$ for boys.

BMI: The BMI (kg/m^2) was calculated from self-reported weight and height.

Eating problems: Critical eating attitudes were measured using the Eating Attitudes Test (EAT; Garner & Garfinkel, 1979) in its reduced version (Engelsen & Hagtvet, 1999). EAT consists of 12 items (e.g. 'I am preoccupied with a desire to be thinner') assessed on a 6-point Likert scale (from 'Always' to 'Never'). Cronbach's alpha value for this scale was .70 for girls and .66 for boys.

Attitudes toward cosmetic surgery: Starting from separate items used in previous works (Ghigi, 2012) on the willingness to have breast augmentation (this item was administered only to girls), nose job and liposuction, all assessed on a three-point Likert scale ('I already did it/I would do it immediately'; 'I would do it, but later in life'; 'I would never do it'), we created a unique variable assessing the overall interest in cosmetic surgery. If an individual answered one of the interventions mentioned at the highest degree 'Yes, I already did it/I would do it immediately', the level of interest in cosmetic surgery was considered 'high' (score: 3). If the highest degree was 'I would do it, but later in life', we considered a medium (score: 2) interest in cosmetic surgery. If the individual answered all the interventions mentioned with 'No, I would never do it', we considered a low level of interest (score: 1).

Body art: Interest in tattoos and piercing was assessed with a single item ('Have you ever done any modifications to your body like piercing or tattoos?'), with possible answers ranging from 1 ('No, and I think I never will') to 5 ('Yes, and I think I will do more').

Physical activity: Sport and regular physical activity was assessed with a single item ('How often do you practice physical activity outside of school? Like sport, gym, dance, etc.') with possible answers ranging from 1 ('Less than once a week') to 4 ('Every day').

Results

In order to describe how adolescents responded to our instruments and to explore gender differences on all the considered variables, we conducted a series of descriptive statistics and a one-way MANOVA with gender as the independent variable, the results of which are reported in Table 1.

The MANOVA was significant [$F(8, 768) = 37.34, p < .001$] and confirms what has widely been reported in the international literature, with girls obtaining significantly higher values than boys for almost all measured variables. Consistently with the first hypothesis, the mean scores among girls and boys show that girls perceived and internalized the social pressures to adhere to the perfect body ideal presented by the media more than boys and obtained a lower BMI. In addition, girls are more dissatisfied with their body.

Table 2. Correlations amongst variables for girls and boys.

	1	2	3	4	5	6	7
<i>Girls</i>							
1. Pressure (1, 5)	–						
2. I (1, 5)	.64***	–					
3. BMI (13.42, 32.45)	.18***	.04	–				
4. BD (1, 5)	.39***	.37***	.32***	–			
5. EP (1, 5)	.42***	.37***	.11**	.39***	–		
6. CS (1, 3)	.25***	.32***	.01	.19***	.21***	–	
7. Body art (1, 5)	.05	.06	–.02	.11*	.16***	.19***	–
8. PA (1, 4)	.00	–.01	.01	.10*	.11**	–.162***	–.08
<i>Boys</i>							
1. Pressure (1, 5)	–						
2. IG (1, 5)	.65***	–					
3. BMI (13.42, 32.45)	.08	–.02	–				
4. BD (1, 5)	.42***	.35***	.15**	–			
5. EP (1, 5)	.35***	.25***	.08	.35***	–		
6. CS (1, 3)	.25***	.34***	.16**	.29***	.21***	–	
7. Body art (1, 5)	.01	.04	.08	.04	.06	.14	–
8. PA (1, 4)	–.08	–.05	.07	–.16	.02	–.05	.06

Notes: I = internalization; BMI = body mass index; BD = body dissatisfaction; EP = eating problems; CS = cosmetic surgery; PA = physical activity. Numbers in parentheses represent scale range. * $p < .05$; ** $p < .01$; *** $p < .001$.

Regarding the attitudes toward body transformation, females obtained higher mean scores for eating problems and showed more favourable attitudes toward cosmetic surgery and body art; boys, conversely, were more inclined to act on their body through an intense physical activity.

Table 2 shows the correlations between variables separately for girls and boys. For girls, there was no significant correlation between pressure, internalization and BMI, on the one hand, and body art and physical activity on the other. At the same time, no correlations were found between internalization and BMI, between BMI and cosmetic surgery and between body art and physical activity. The correlations between BD and, respectively, body art and physical activity were significant, but low. All other variables correlated significantly with each other and the strength of these correlations was medium to high.

In boys, no correlations were found between BMI and, respectively, pressure, internalization and eating problems. Body art and physical activity did not correlate with any of the variables considered in the study. Finally, all other variables correlated significantly with each other with medium to high strength.

Test of proposed model for the mediation of BD

In the next series of analyses we tested our second and third hypothesis, verifying the support for our proposed theoretical model presented in Figure 1. Since our aim was also to analyse the similarities and the differences between girls and boys, a multi-group modelling procedure was used. This approach allowed us to simultaneously test the same model and the differences on two distinct groups. We relied on the software Mplus 6.1 (Muthén & Muthén, 2010) for the statistical analysis. As recommended by Asparouhov and Muthén (2009), model fit was evaluated using the comparative fit index (*CFI*), the Tucker-Lewis Index (*TLI*), root mean square error of approximation (*RMSEA*) and standardized root mean square residual (*SRMR*). For the *CFI* and *TLI*, values close to or greater than .95 indicate a good model fit, whereas for *RMSEA* and *SRMR* values below .05 indicate a good model fit. Before assessing the model fit, and in order to verify measurement invariance between the two groups on all the latent variables used, multiple-group measurement invariance tests were carried out on each variable (see Millsap, 2007). The analyses confirmed the measurement invariance of all the latent variables.

Starting from the paths mirroring the theoretical models, non-statistically significant paths and correlations were deleted. The final model fitted the data well: $\chi^2(29) = 28.77$ (Females = 13.89; Males = 14.88), $p = .48$; *CFI* = 1.00, *TLI* = 1.00; *RMSEA* = .00, *SRMR* = .03.

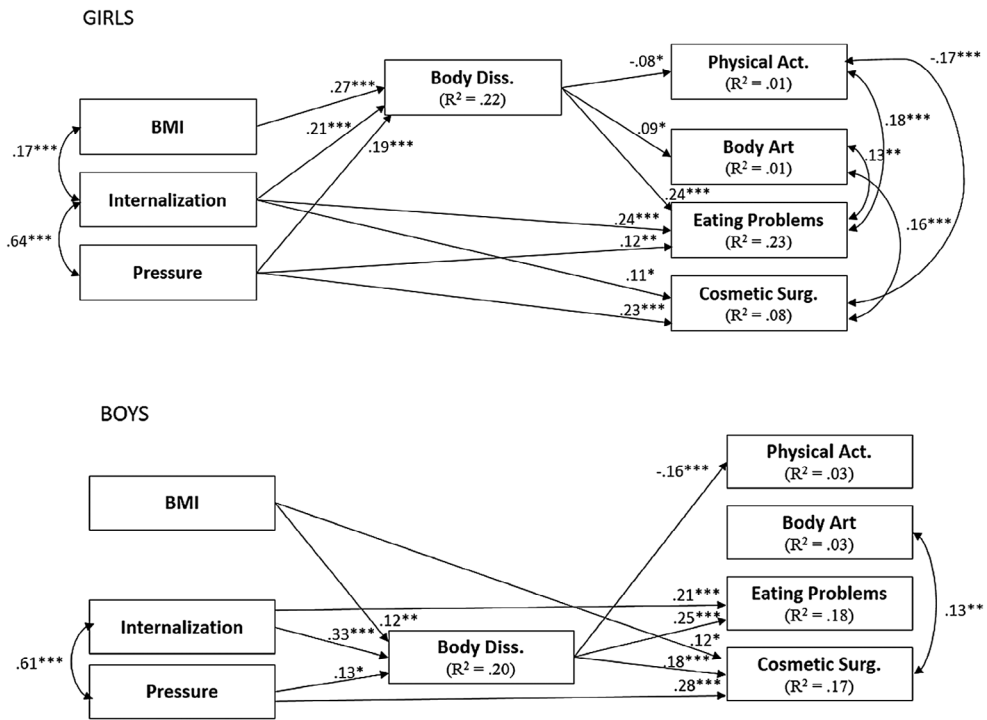


Figure 2. Final structural equation model (multi-group approach) on females and males.
Note: BMI = body mass index; diss. = dissatisfaction; act. = activity; surg. = surgery. Reported coefficients are standardized. * $p < .05$. ** $p < .01$. *** $p < .001$.

As can be seen in Figure 2, as hypothesized, path coefficients revealed that for both groups BD is positively predicted by BMI, internalization and pressure. In addition, physical activity is negatively predicted while eating problems is positively predicted by BD. Moreover, internalization is a positive predictor of eating problems for both groups (in our theoretical model, we hypothesized this only for girls). Finally, attitude towards cosmetic surgery is positively predicted by pressure (in our theoretical model, we hypothesized this only for girls). No direct effects of media influence on physical activity and body art was found.

As far as gender differences are concerned, body art is positively predicted by BD, and eating problems are positively predicted by pressure only for girls. With regard to attitude towards cosmetic surgery, for the female group this variable is positively predicted by internalization, while for boys it is positively predicted by BMI and BD.

Finally, the mediation analysis of BD between BMI, internalization and pressure, and indicators of body outcomes was computed with Mplus (Delta Method; Taylor, MacKinnon, & Tein, 2007). The indirect effects show that in both girls and boys the prediction of BMI on eating problems is fully mediated by BD (girls $p < .001$; boys $p < .05$) while the prediction of internalization on eating problems is partially mediated by BD (girls $p < .001$; boys $p < .001$). Moreover, the prediction of pressure on eating problems is partially mediated by BD for girls ($p < .01$) and fully mediated for boys ($p < .05$); the predictions of BMI and internalization on the attitude towards cosmetic surgery are, respectively, partially ($p < .05$) and fully ($p < .01$) mediated by BD for boys.

Discussion

The study tested a multivariate model of predictors of BD focusing on media influence and BMI. We also examined the predictive and mediating role of BD on a set of body modification strategies.

Our results largely confirm the existing literature about levels of BD and its predictors in girls and boys. Girls are more affected by an objectified body consciousness than boys (Dakanalis et al., 2015; Fredrickson et al., 1998). Accordingly, they show higher levels of internalization and pressure to adhere to aesthetic ideals and are more dissatisfied with their bodies. This is consistent with previous studies stating that, inasmuch as beauty as a value is a social norm transformed into an individual value, adolescent behaviour is committed to reduce the gap between personal body image and that proposed by the media, sometimes associated with feelings of deep distress and suffering (Hargreaves & Tiggemann, 2004; Thompson & Stice, 2001; van den Berg et al., 2007).

BMI also proved to be a stronger predictor of BD for girls than for boys, as in other international researches (e.g. Swami et al., 2010). Men, in many Western societies, are socialized to strive for muscularity and leanness, thus a research simply assuming a linear association between BMI and BD in male subjects would not correctly assess their discomfort, which is mostly affected by perceived muscular tone and mass (Jones & Crawford, 2005; Rodgers et al., 2012).

Media influence, for girls, also has a direct effect on eating problems and cosmetic surgery, through an internalization of ideal body standards and a perceived pressure to conform to those ideals. This is consistent with the available evidence suggesting that women report a greater likelihood of willingness to undergo various cosmetic procedures compared to men (Brown et al., 2007; Frederick et al., 2007; Swami et al., 2009) as a function of the greater sociocultural pressure on women to attain ideals of physical and sexual attractiveness (Swami & Furnham, 2008). From the 1990s, feminist scholars see cosmetic surgery as the result of a culture that convinces women that surgical enhancement is a concrete option for psychological survival in a world hostile to ugly, obese and aged women (Bartky, 1990; Bordo, 1993; Jeffreys, 2005; Wolf, 1990). Our result is also consistent with more recent literature recognizing cosmetic surgery as a matter of choice, albeit under conditions of constraint (see Heyes & Jones, 2009). As the groundbreaking research suggested by Davis (1995), even cosmetic surgery patients are aware of the external pressures to conform to unattainable body ideals they receive (especially by the media) just because of their gender.

Besides confirming findings already known in the scientific field, our research goes further by testing a theoretical model for boys and girls concerning the mediating effect of BD in body modification activities. The results showed that, for girls, BD mediates and positively affects eating problems, thus corroborating previous researches (Polivy & Herman, 2002; Stice et al., 2011). As hypothesized, we found that BD has a stronger effect on eating problems and on cosmetic surgery in boys than in girls, but a negative effect on physical activity. According to Neumark-Sztainer and colleagues (2006), men are more involved in physical activities than women probably because they are more satisfied with their body, so physical activities based on performance and competition, like those most practiced by male adolescents in Italy, could require a certain level of body satisfaction and confidence.

Interestingly, our results suggest that male attitudes toward cosmetic surgery seem to be directly affected by one component of media influence, namely the pressure to conform to aesthetic ideals promoted by the media, whereas internalization is fully mediated by BD. This could be explained by the fact that, in the Italian visual media culture – where young, thin and beautiful female bodies are predominant – the drive to change one's body through surgery among boys can depend on an explicitly perceived pressure to conform to aesthetic ideals, but not directly on the internalization of aesthetic ideals, as in girls.

In addition, body art is unaffected by BMI and media influence in both genders, while it is affected by BD only for girls. In other words, in our sample piercing and tattoos can be conceived as a way out from discomfort about one's body only for female. Presumably, body art is more related to fashion and aesthetic norms of physical appearance in current consumer culture, devoted to modify the body as an expression of the inner self, rather than being a symptom of unease with one's body.

It is worth noting that our dependent variables are also differently associated with one another in terms of gender. Among girls, interest in cosmetic surgery is, for instance, significantly associated with body art and physical activity, and so is eating problems. For males, the only significant association found is between body art and cosmetic surgery. These findings could suggest that the interest in manipulating

body appearance is generally stronger in girls, as they are encouraged from their childhood to devote time and energy to modify their image and to invest in their erotic capital (Hakim, 2011). Boys, on the contrary, may experience discomforting feelings about their body, but may nevertheless be reluctant to manipulate or modify it.

Conclusions

A number of limitations to the present study should be born in mind. Firstly, to avoid a too long or complicated questionnaire, some variables have been measured with single items and we did not use gender-specific scales. Secondly, further variables previously found to be associated with BD, eating problems and cosmetic surgery (Brown et al., 2007; Sherry, Hewitt, Flett, & Lee-Baggley, 2007) could be added, such as media exposure or investment in physical appearance (Sarwer et al., 2005). It is not unlikely that other individual characteristics like proneness to anxiety or depression may moderate vulnerability to social influence on BD and/or mediate the relationship with body modification behaviours. In the future, it would appear useful to explore these individual attributes. Finally, this is a cross-sectional study, but a longitudinal or panel study could allow researchers to analyse more effectively the trends of BD and its effects in boys and girls across adolescence.

Notwithstanding these limits, this study provides evidence that boys and girls react differently to BD and to other personal and sociocultural factors, with girls being more disposed than boys to finding a way out from their body discomfort about their body *through* the body itself. Future studies should look more deeply into possible gender differences in BD and body modification practices in order to identify effective ways to provide adolescents with skills to manage media influence on body ideals and thus reduce the negative consequences of BD.

Disclosure statement

No potential conflict of interest was reported by the authors.

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