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"I Like My Body; Therefore, I Like Myself": How Body Image Influences Self-Esteem—A Cross-Sectional Study on Italian Adolescents

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Abstract

Puberty is a very important process for adolescents. Physiological changes and body modifications lead to great vulnerability. This vulnerability is connected to the adolescent's perceptions of the uncertainty of outcomes due to the transformation of their infant body into an adult one. This cross-sectional study aims to better understand whether body image perception and satisfaction influence self-esteem in a sample of Italian male and female adolescents. A total of 242 adolescents (120 male and 122 female individuals) aged 11 to 17 years (*M* = 13.33; *SD* = 1.7) completed the study measures. Quantitative and qualitative instruments were used. In particular, adolescents completed self-report questionnaires to assess their pubertal status (Pubertal Developmental Scale, Peterson, Crockett, Richards, & Boxer, 1988), their body esteem (Body Esteem Scale, Mendelson, Mendelson, & White, 2001), their body image (Body Image Satisfaction Questionnaire, Rauste-von Wright, 1989), and their self-esteem (Rosenberg Self-Esteem Scale, Rosenberg,1965). Adolescent were also invited to depict themselves to assess their body representations by completing the Drawing Me test (Confalonieri, 2011). Results from MANOVAs confirm that gender and age are two factors that influence body image perception and satisfaction. SEM analyses show that good self-esteem is reached through good body satisfaction following different trajectories in male and female individuals. Data from adolescents' body representations obtained via drawings confirm that females are more concerned about their body changes and about the appearance of secondary sexual features than males. This research, stressing the influence of various individual factors and highlighting the psychological distress and dissatisfaction of adolescents, especially females, confirms the importance of studying this topic in order to generate preventive measures to help adolescents through this developmental task.

Keywords: body image, self-esteem, puberty, adolescence

Adolescence is a period of life during which many important body changes take place that are determined by pubertal development. Physical and psychological changes can influence perceptions of and satisfaction with body image, both of which are key elements in the development of self-esteem and social adjustment among adolescents (Alsaker & Flammer, 2006; Mitchell, Petrie, Greenleaf, & Martin, 2012; Williams & Currie, 2000).

Many studies have focused on the relationship between body image and self-esteem during adolescence (Arim, Shapka, & Dahinten, 2006; Bell & Dittmar, 2011; Grieve, 2007; Hutchinson, Rapee, & Taylor, 2010). Most of these studies suggest that girls are more vulnerable than boys to physical changes; this vulnerability tends to turn into a greater level of body and weight dissatisfaction, which reflects low self-esteem (Brunet, Sabiston, Dorsch, & McCreary, 2010; Rajchert, 2010; Shaw, Stice, & Springer, 2004). This dissatisfaction seems less overwhelming

in male samples (Davison & McCabe, 2006; Ramos, Rivera, Moreno, & Jimenez-Iglesias, 2010). Age is another factor that influences body satisfaction and self-esteem. On average, those in their early adolescence are more satisfied with both their physical appearance and their weight, as is shown by their achievement of higher self-esteem scores than those in the middle of their adolescence (Ciuluvica, Mitrofan, & Fulcheri, 2010; Gatti, Confalonieri, Ionio, & Traficante, 2007; Holmqvist & Frisén, 2012).

Even though age and gender are two widely studied factors in adolescents' perceptions of their own bodies, other individual variables, such as the level of pubertal development and the Body Mass Index (BMI), could also influence one's perception and representation of one's body and one's self-esteem (Carlson Jones & Crawford, 2005; Fenton, Brooks, Spencer, & Morgan, 2010; Meshkova, Nikolaeva, & Kopnina, 2010).

Delayed or advanced pubertal development is commonly agreed to be a somewhat risky factor for adaptation and psychological wellbeing (Graber, Brooks-Gunn, & Warren, 2006; van Jaarsveld, Fidler, Simon, & Wardle, 2007). The theory called the "off-time hypothesis" considers the deviation from the normative pubertal timing (being "off time"), whether early or late, to be a source of difficulties in adolescents' adaptations (Alsaker & Flammer, 2006; Canals, Vigil-Colet, Chico, & Martí-Henneberg, 2005; Graber, Brooks-Gunn, & Warren, 2006; Susman & Rogol, 2004). According to the off-time hypothesis, girls who mature early are less satisfied with their own bodies and more concerned about physical appearance. Moreover, they show low body esteem and high stress levels. Therefore, these girls tend to engage in more physical activities that are often associated with weight-loss diets (van Jaarsveld et al., 2007). Body dissatisfaction among early maturing girls is often accompanied by teasing from peers, especially at the beginning of their pubertal development.

In contrast, the effects of early pubertal maturation in boys are associated more with alcohol abuse, aggressive behavior, or deviance (Arim, Shapka, & Dahinten, 2006; Rose, 2002; van Jaarsveld et al., 2007; Weichold, Yao, & Silbereisen, 2010). Other studies emphasize that boys who mature early are more problematic in terms of peer-reported school adjustment, self-reported bullying, overt delinquency, and conflicts with authority (Scholte, 2010). These effects tend to persist in adulthood (Smith, 2010). Therefore, the main consequence of early pubertal development in girls is less satisfaction with their own body images; in boys, this consequence is shown in their behaviors, which leading to more difficulty in social adjustments. Late-maturing girls seem to be at less risk than early maturing girls even though they show lower self-esteem. Also, young adults report more internalized problems, while late-maturing boys seem to be teased by peers and are perceived as emotionally nervous, feeling victimized and isolated (Biehl, Natsuaki, & Ge, 2007; Fasche, Weichold, & Silbereisen, 2010; Graber, Brooks-Gunn, & Warren, 2006; Scholte, 2010).

It is important to consider the fact that growth occurs earlier in female individuals than in male individuals. Therefore, at 11-12 years old, the females have already begun pubertal development, and height and weight are greater than they are in the male individuals. This implies that girls who mature earlier will perceive themselves differently not only by comparison with female peers (who have not developed early) but also in comparison with males (who naturally develop later than females). This double confirmation of their precocity can make them doubly vulnerable and therefore more at risk.

Although numerous studies have been conducted on the pubertal development roles of body image and self-esteem, the results are not yet fully clear and shared (Nouri, Hill, & Orrell-Valente, 2011; Williams & Currie, 2000). It has become evident that problematic development pathways associated with early and late maturation in puberty lead to internalized or social adjustment problems that seem to last until early adulthood (Weichold & Fasche, 2010).

In addition, most studies are mainly based on female samples and are conducted in the United States. Studies have only recently been conducted in Europe on pubertal maturation consequences in male and female samples taking into account this issue (Fasche, Weichold, & Silbereisen, 2010; Scholte, 2010).

BMI is another factor that could affect self-perception and body satisfaction during pubertal development (Grogan & Richards, 2002; Petrie, Greenleaf, & Martin, 2010). Carlson Jones and Crawford (2005) have identified BMI as being directly related to body dissatisfaction among adolescents, and Shroff and Thompson (2006) have similarly detected the impact of the BMI on body dissatisfaction among female individuals, dissatisfaction that is derived from the endorsement of the media's and peers' messages.

This cross-sectional study aims to better understand whether body-image perceptions and satisfaction influence self-esteem in a sample of Italian male and female adolescents. The procedure used in this work is innovative in some ways. First, it considers a sample of both males and females, and secondly, it considers and holds together more traditional variables (such as age and gender) and less frequently studied variables (such as pubertal development and BMI). Finally, in this work we use both self-reports or quantitative instruments and qualitative instruments.

In particular, this study aims to analyze how pubertal development and BMI impact body image perception and representation as well as self-esteem in male and female adolescents. Body image was studied both through self-reporting measures (to assess body perception) and through drawing (to assess the mental representation of the body).

More precisely, we are interested in exploring:

1. Which factors that influence the body image are considered to be a composite construct; in particular, how gender (male and female), age (early adolescents and adolescents), pubertal status (Petersen et al.'s five categories, 1988), and BMI (global index; weight and height, separately) impact body perception and body satisfaction
2. Whether body image influences self-esteem
3. Whether a relationship exists between body image and body representation (drawings)

Method

Participants

A total of 242 adolescents (120 male and 122 female individuals) between 11 and 17 years old (M = 13.33; SD = 1.7) completed all study measures. According to literature (Blos, 1967; Finlay, Jones, & Coleman, 2002; McCabe & Ricciardelli, 2005; Mendelson, Mendelson, & White, 2001), the sample was divided in two groups: 134 early adolescents (males = 67; females = 67) aged 10–13 years (M = 11.93; SD = 0.7) and 108 adolescents (males = 53; females = 55) aged 14–17 years (M = 15.07; SD = 0.8). Participants were recruited from grades 6 to 11 from the metropolitan area of Milan, Italy. They had Italian backgrounds and came from upper-middle socioeconomic classes. Ethical approval was gained through the university's research ethics committee, which required informed consent from each of the participants' parents.

Measures and Procedure

Psychological assessment procedures and data collection of anthropometric clinical features (weight, height, and BMI) were performed by researchers. Questionnaires and drawings were completed by adolescents during one class period (50 minutes) in a group setting. Researchers monitored the processes and ensured that the students completed the questionnaires independently and in a silent and private context. Each student was free to withdraw from the research at any time and to express any doubts or feelings of discomfort to the researchers.

1) Anthropometric features — BMI is used to estimate a healthy body weight based on a person's height. It is the most widely used diagnostic index to identify weight problems, usually to estimate whether individuals are underweight, normal weight, overweight, or obese. The formula universally used was kg/m^2.

2) Pubertal status — The Pubertal Developmental Scale (PDS; Petersen, Crockett, Richards, & Boxer, 1988) assessed the effects of sex-specific development on five characteristics and was structured to provide a measure of pubertal status. It measures characteristics including growth spurts, skin changes, and body hair growth for both boys and girls; breast development and menarche in girls; and voice change and facial hair growth in boys. Subjects had to answer each characteristic (five items on the female version and six items on the male version) on a four-point scale (1 = no development to 4 = development already completed). The categorical PDS scale also took into account specific combinations of pubertal characteristics (presence or absence of menarche and reported breast and body hair development in girls as well as facial, body hair, and voice change in boys) in an effort to classify youths into five categories of development: pre-puberty, early puberty, mid-puberty, late puberty, and post-puberty.

3) Body esteem — The Body Esteem Scale (BES; Mendelson, Mendelson, & White, 2001; Italian version by Confalonieri, Gatti, Ionio, & Traficante, 2008) consisted of 14 items, and the respondents had to indicate their degrees of agreement on a five-point Likert scale ranging from 0 (never) to 4 (always). In addition, seven negative items were reverse-scored. The authors found a three-factor solution: attribution (the evaluations of one's own body and appearance attributed to others), weight (weight satisfaction), and appearance (an overall feeling about one's appearance). For these data, the three subscales had adequate reliability (appearance: alpha = .76; attribution: alpha = .68; weight: alpha = .84).

4) Body image — The Body Image Satisfaction Questionnaire (BIS; Rauste-von Wright, 1989; Italian version by Alparone, Prezza, & Camarda, 2000) measured the level of satisfaction regarding one's own body image. It included 26 items that described all of the body parts (arms, legs, nose, feet, and so on). Respondents provided answers about their satisfaction levels on a four-point Likert scale; higher scores indicated lower levels of body satisfaction. Two subscales had been identified: face (concerning the parts of the face) and figure (accounting for body parts). The Italian version of the BIS had an adequate reliability (Cronbach's alpha = .88) and a good test-retest stability (*r* = .85). For these data, internal consistency was very good (Cronbach's alpha = .91).

5) Self-esteem — The Rosenberg Self-Esteem Scale (Rosenberg, 1965; Italian version by Prezza, Trombaccia, & Armento, 1997) is the most widely used measure of global self-esteem and has been determined to be valid and reliable among students (Rosenberg, 1979). Responses to the 10 items were rated on a four-point Likert scale (strongly disagree to strongly agree) yielding scores between 10 and 40. The scale showed high internal consistency (Cronbach's alpha = .84) and a good test-retest correlation (*r* = .76). For the present study, internal consistency was good (Cronbach's alpha = .76).

6) Body representation — The Drawing Me test was originally created by Witkin, Dyk, Faterson, Goodenough, & Karp (1962) for adults and then it was modified and rearranged for adolescents (Confalonieri, 2011). We decided to use drawings consistently with a good deal of research literature that suggested the utility of incorporating drawings into assessment practices. The drawing method, in fact, offers the opportunity to obtain qualitative information that may not be easily retrieved through conventional paper-and-pencil verbal tests and, as such, may broaden the range of available information (Matto, 2006). The aim of the adapted measure was to identify, through a graphic representation (a self-made drawing), what an adolescent thought about his or her body: perceptions, attributions, satisfaction, or personal orientation toward any body part or the self-perception of the integration of body parts. The instruction was as follows: "Please try to depict yourself by drawing the way you would want to present yourself to a person who was interested in you but did not know you. You are free to represent yourself in the most appropriate way, trying to communicate to the other person who you are and what your characteristics are".

Three scales were evaluated: formal level, details level, and sexual characterization level. Each one was structured in three different subscales, which were scored from 1 to 3 (1 = low level; 2 = medium level; 3 = high level).

The formal level subscales measured the similarity between the drawing and a realistic body shape. In particular, the "form" analyzed the shape of all body parts, the "integration" analyzed the link among different parts of the body (i.e., the link between arms and hands; legs and feet; and head, neck, and shoulders), and the "proportion" analyzed the proportions of the human figure.

The detail level's subscales measured the number of bodily, facial, and clothing details represented in the drawings. In particular, "body details" analyzed the number of elements that composed the figure; "face details" analyzed the number of face elements represented (i.e., eyes, nose, and lips); and "clothes details" counted the number of clothing items represented (i.e., top, t-shirt, pants, skirt, accessories, and hat).

The sexual characterization level subscales measured the presence/absence of secondary sexual features. In particular, "body sexual characterization" analyzed the accuracy of self-representation of sexual features (i.e., breast or hips for girls; body hair or muscles for boys); "face sexual characterization" analyzed the presence of sexual features of the face (i.e., makeup, eyeliner, and lipstick for girls; beard and square-jaw for boys); and "clothes sexual characterization" analyzed the articulation of gendered wear (i.e., skirts and tops for girls; pants and sweatshirts for boys). After the training period, three blinded independent examiners rated every drawing. The accordance between judges, measured by Cohen's κ coefficient, was .84.

To estimate the inter-rater reliability, Cohen's κ was carried out instead of Cronbach's Alpha because the scores on the single subscales were not expected to be consistent with each other. In fact, a drawing can be rated with a high level of "proportion", but a low level of "integration" even though both indexes refer to the scale "formal level". This is the reason why the analyses were carried out on the scores of the single subscales and not on the global scales that are to be considered only descriptive macro categories.

Data Analyses

The following data analyses were performed:

    a. Descriptive analyses of the study sample were generated. Data were expressed as mean ± standard deviations or absolute frequencies where appropriate.

b. Multivariate and univariate analyses. A multivariate analysis (MANOVA) was carried out with three BES subscales (appearance, attribution, and weight satisfaction) and two BIS subscales (face and figure) as dependent variables as well as two fixed factors: gender (male and female) and age (early adolescents and adolescents). Pubertal status (measured by Petersen et al.'s categories, 1988) was not considered in this kind of analysis because the sample distribution according to this variable is strongly unbalanced (see Table 1).

c. Structural equation models were carried out to assess the relationship among BMI, pubertal status, and body image along with their effects on self-esteem.

d. The relationship between drawings and body esteem was analyzed using Spearman's Rho correlation coefficient.

Results

Descriptive Analyses

Sample characteristics for each instrument are presented in Table 1, which shows the pubertal status distribution for gender and age.

Table 1

Pubertal Status Distribution for Gender and Age

Pubertal status	Males (n = 120)		Females (n = 122)	
	% Preadolescents (*n* = 67)	% Adolescents (*n* = 53)	% Preadolescents (*n* = 67)	% Adolescents (*n* = 55)
Pre-pubertal	3.0	0.0	4.5	0.0
Beginning	32.8	5.7	9.0	0.0
Mid-pubertal	56.7	37.7	37.3	0.0
Advanced pubertal	7.5	52.8	47.8	80.0
Post-pubertal	0.0	3.8	1.5	20.0

The data showed an unbalanced pubertal distribution by gender and age. In particular, no adolescents and a small number of early adolescent girls were in premenarche statuses (pre-pubertal and beginning). During the past few years, the trend of menarche age has been lower than it was in the past, and our sample followed this trend (Bernasconi, 2009; Sartorio & Buckler, 2007). Male distribution showed a more linear development trend according to the literature (Pompper, 2010; Smolak & Stein, 2010).

As shown in Table 2, the data suggests that during preadolescence, female individuals' BMIs were higher than those of male individuals because male adolescents' "growth spurts" occurred later. When we compared the value in kg for the genders at each age, we found that the margin of discrepancy between male individuals and female individuals was very great in early puberty.

During pubertal development, the weight of male adolescents grew by about 20 kg while the weight of female adolescents grew by only about 6 kg. Height followed the same trend (Table 2). The growth in female individuals occurred earlier than it did in male individuals, so at 11-12 years old, female individuals had already begun pubertal development, and their heights and weights were higher than those of the male adolescents. Obviously, in adolescence, male individuals reached greater weights and heights because the development of muscles and bone was greater in them than it was in female individuals.

Table 2

BMI Means by Gender and Age

	Males				Females			
	Preadolescents		Adolescents		Preadolescents		Adolescents	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
BMI	18.42	2.50	20.51	2.90	19.29	3.00	19.30	2.30
Height (m)	1.53	0.10	1.75	0.60	1.55	0.08	1.65	0.06
Weight (Kg)	43.71	8.40	63.02	11.60	46.84	10.20	52.90	6.70

Multivariate and Univariate Analyses

In accordance with the findings in some of the literature (Ata, Rojas, Ludden, & Thompson, 2011; Graber, Brooks-Gunn, & Warren, 2006; van Jaarsveld et al., 2007), we wanted to test the roles of gender and age as two factors that influenced body image. We conducted a MANOVA with three BES subscales (appearance, attribution, and weight satisfaction) and two BIS subscales (face and figure) as the dependent variables along with two fixed factors (gender and age). For body image (BES and BIS scales), a multivariate analysis showed that a main effect existed for gender (Pillai's tr.: $F[3,236] = 11.18$, $p < .001$) and age (Pillai's tr.: $F[3,236] = 6.53$, $p < .001$), and an interaction effect existed too (gender x age: Pillai's tr.: $F[3,236] = 2.72$, $p < .005$). As for the BES scale, univariate post hoc analyses showed significant differences between the scores by gender ($F[1,238] = 28.58$, $p < .001$) for appearance (males: $M = 12.85$; females: $M = 9.93$), by age ($F[1,238] = 12.63$, $p < .001$) for attribution (early adolescents: $M = 9.57$; adolescents: $M = 11.41$), and in the interaction effect for weight satisfaction ($F[1,238] = 4.11$, $p < .005$). The older male individuals were more satisfied with their weight than their younger peers; the opposite was true for female adolescents (see Table 3).

Table 3

Body Image (Body Esteem and Body Satisfaction) and Self-Esteem Means for Gender and Age

	Males				Females			
	Preadolescents		Adolescents		Preadolescents		Adolescents	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Body esteem (BES)								
Appearance	12.96	4.35	12.74	3.46	10.36	4.41	9.51	4.52
Attribution	10.19	3.85	11.06	3.66	8.96	2.79	11.22	3.21
Weight	10.73	3.95	12.11	3.59	9.16	4.80	8.27	4.80
Body Satisfaction (BIS)								
Face	31.75	6.55	33.02	7.96	33.49	5.61	35.45	5.92
Figure	12.58	3.09	13.36	3.81	14.34	3.41	16.27	4.41
Self-esteem (RSE)								
Self-esteem	30.97	4.31	32.64	4.51	30.67	4.57	29.42	4.78

As for the BIS scale, the results of univariate post hoc analyses showed significant effects between the scores by gender ($F[1,238] = 6.13$, $p < .005$) on face (males: $M = 32.38$; females: $M = 34.47$) as well as by gender ($F[1,238] = 24.24$, $p < .001$) on figure (males: $M = 12.97$; females: $M = 15.3$). In addition, a significant effect by age ($F[1,238] = 8.12$, $p < .005$) on the figure subscale (early adolescents: $M = 13.46$; adolescents: $M = 14.81$) was found.

For the Rosenberg Self-Esteem Scale, the ANOVA showed a gender difference ($F[1,238] = 7.34$, $p = .007$) and an interaction effect by age ($F[1,238] = 6.20$, $p = .013$). In particular, the female adolescents were shown to have the lowest self-esteem of all of the groups (see Table 3).

The results suggested that gender and age were two factors that influenced body perception and body satisfaction. In particular, female adolescents had low body esteem and great concerns about their weight, reflecting great dissatisfaction with their body parts and low self-esteem compared to their male peers. Due to the differences between males and females, we decided to carry out further analyses, splitting the sample by gender.

Structural Equation Models

The EQS 6.0 (Byrne, 2006) was employed to conduct the SEM analysis. Two different models were tested (see Figure 1 and Figure 2).
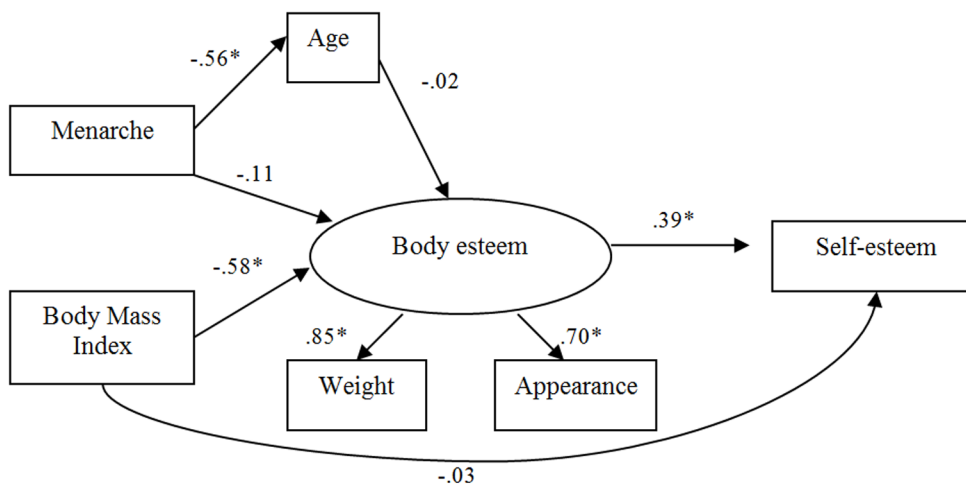

Figure 1. Females: Standardized structural coefficients for weight, and presence of menarche on body esteem and general self-esteem.

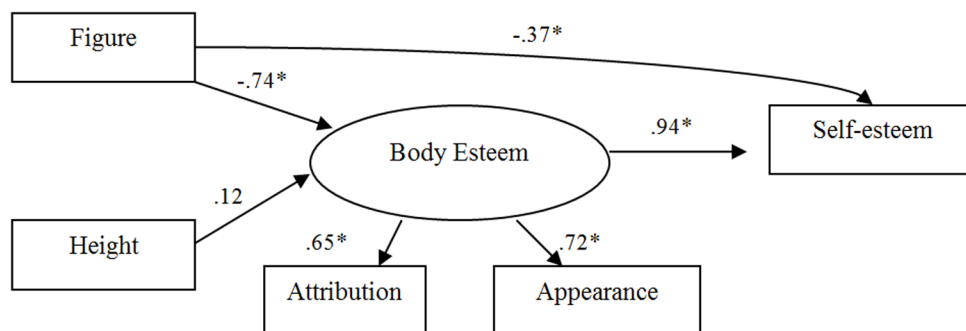*Note.* Statistics significant at the 5% level are marked with *.

Figure 2. Males: Standardized structural coefficients for height and figure satisfaction on body esteem and general self-esteem.

Note. Statistics significant at the 5% level are marked with *.

Several goodness-of-fit indexes were used to evaluate their adequacy: According to Hu and Bentler (1999), the Confirmatory Fit Index (CFI) should be higher than .95, the Root Mean Square Error of Approximation (RMSEA) should be lower than .06, the Standardized Root Mean Square Residual (SRMR) should be lower than .08, and the chi-square/*df* ratio should be lower than 3 (Corbetta, 1992) (see Table 4). As for female adolescents, the structural path in Figure 1 fitted adequately (see Table 4) and showed that a low BMI along with the absence of menarche led to higher body esteem and to a good level of self-esteem (see Figure 1). As for male individuals, the best model (see Figure 2) showed the main effects of height and figure satisfaction on body esteem. The final outcome of positive body esteem was high self-worth (Figure 2).

Table 4

Indices for Males' and Females' Models

Models	GFI	AGFI	CFI	SRMR	RMSEA	90%CI	χ^2	df	χ^2/df
Females	.970	.894	.968	.045	.082	.160	10.572	6	1.762
Males	.968	.842	.946	.60	.135	.237	9.312	3	3.104

Drawing Me

Due to the differences between male and female individuals founded in quantitative analyses, we split the sample into two groups for the drawings analyses. Drawings were analyzed using Spearman's Rho correlations among body image measures (BES and BIS scales), physiological indices (age in years, BMI), pubertal status, and menarchal status (only for girls) on one side and "Drawing Me" on the other side. The results were shown separately for each group.

Female Group

Spearman's Rho correlations among self-report measures, age, physical indices, pubertal status, and "Drawing Me" scales and subscales were shown in Table 5.

Table 5

Spearman Rho Correlations: Significant Results for Females

Variable	Drawing Me subscale	ρ	p
Body image – Appearance[a]	Clothes details	-.202	.029
Age	Proportions	.228	.014
Age	Body details	-.279	.002
Age	Body sexual characterization	.267	.003
BMI	Clothes details	.221	.020
Height (meter)	Proportions	.228	.014
Height (meter)	Body details	-.211	.024
Height (meter)	Body sexual characterization	.194	.037
Weight (Kg)	Clothes details	.277	.003
Menarchal status	Clothes details	-.241	.008
Menarchal status	Body sexual characterization	.229	.012
Pubertal status	Clothes details	-.242	.008
Pubertal status	Body sexual characterization	.201	.028

[a]BES subscale

By observing Table 5, it was possible to identify seven variables that influenced female drawings. The first was body image. The inverse correlation between appearance (BES subscale) and clothes' details reinforced the fact showed that the girls who showed low body esteem tended to cover their bodies with clothes (Harriger, Calogero, Witherington, & Smith, 2010).

The second factor was age. Adolescent females drew themselves with many body details, many sexual characterizations, and adequate body shape and proportions. They had probably already mentalized their body shape, and they were able to draw it in an articulate and more comprehensive way than preteens were.

Physical indices and pubertal statuses seemed to influence the drawings too. First, there was a significant correlation between BMI and clothes' details. When the weight criterion was analyzed, it was observed that in overweight girls' drawings, clothes' details were richer: these girls probably wanted to cover their bodies' perceived "out of proportion" states.

Height was important too: taller girls were more focused on proportions and less focused on body details than shorter girls were. Taller girls began to draw a "personalized body," marking pubertal changes through a high number of secondary sexual characteristics and good proportions.

Finally, the relationship among the pubertal status, menarche, and sexual characterization level reinforced the link between physical and psychological development. In advanced pubertal statuses, the girls drew themselves as women, underlining their belonging to the female gender. Their drawings were rich in sexual body features: breasts, large hips, and long legs. Makeup, double lips, lipstick, eyeliner, and eyebrows appeared on their faces as well. This emphasis was evident from the inverse correlation to the clothes' details: the representation of themselves as "women" appeared less in clothes and more in bodily and physical details.

Male Group

Spearman's Rho correlations among self-report measures, age, physical indices, pubertal status, and "Drawing Me" scales and subscales were shown in Table 6.

Table 6

Spearman Rho Correlations: Significant Results for Males

Variable	Drawing Me subscales	ρ	*p*
Body image – Face[a]	Face details	-.193	.038
Body image – Face[a]	Total details	-.184	.048
Body image – Face[a]	Body sexual characterization	-.196	.035
Body Image – Figure[a]	Face sexual characterization	-.194	.037
Age	Body details	-.186	.045
Age	Clothes sexual details	-.206	.026
Height (meter)	Body details	-.194	.040
Height (meter)	Clothes details	-.211	.025
Height (meter)	Clothes sexual characterization	-.197	.037
Weight (Kg)	Clothes details	-.214	.023
Clothes details	Clothes sexual characterization	-.234	.013

[a]BIS subscale

Males' drawings were influenced by body satisfaction (BIS questionnaire), age, and physical indices (weight and height) (Table 6). Boys who were satisfied with their bodies and faces (BIS subscales) represented themselves with a great number of secondary sexual characteristics. It is likely that muscles and body shape seemed to be very important for boys, so they focused on these aspects in their drawings. Age was the second factor to enforce these correlations. Early adolescents drew many bodily details and covered their bodies with many signs and adult clothes. Their body was probably still childish, so they hoped to show their manhood through these external details. Weight and height supported these data too: taller and more muscular boys were not interested in representing themselves with many details and fine clothes but rather chose to show their adulthood directly through their bodies.

Discussion

This study showed that body development in adolescence affected the work of representations of one's own body, especially in females. Girls perceived themselves as dissatisfied with their weights and sensitive to their pubertal development statuses by being on or off time. Males appeared influenced by their height and by the opinion that others judge them based on their bodily appearances. The literature indicated that puberty was a stressful event for adolescents and "off-time maturation" often related to negative consequences for boy and girls (Ata, Rojas, Ludden, & Thompson, 2011; Burke, Schaefer, & Thompson, 2012; Petrie, Greenleaf, & Martin, 2010). The broad set of outcomes of the off-time pubertal maturation was analyzed by many authors, but only a few of the studies focused on the impacts of pubertal development on body image perception and satisfaction. In particular, pubertal maturation was very different in boys and girls, and many authors emphasized the great impact of maturation on girls (Carlson Jones, 2004; Flament et al., 2012; Peterson, Tantleff-Dunn, & Bedwell, 2006). Girls appeared more dissatisfied with their bodies and seemed to be at more risk of engaging in dysfunctional eating behaviors than boys (Ramos, Rivera, Moreno, & Jimenez-Iglesias, 2010; Scholte, 2010). Boys externalized their dissatisfactions or difficulties integrating pubertal changes via antisocial behavior, delinquency, and substance abuse (Fasche, Weichold, & Silbereisen, 2010). In general, few studies had investigated whether the level of pubertal development could influence body perception and body esteem in both groups: boys and girls.

The aim of this cross-sectional study was to explore the factors that influenced body image and self-esteem by considering and comparing male and female groups. The first results carried out with MANOVA showed that gender was the most important factor that influenced body perception; thus, the two groups were considered separately, and EQS analyses were carried out for boys and girls.

SEM analyses seemed to confirm that the aspects that lead to body and self-esteem were different in girls and boys. The girls' self-esteem levels were more influenced by weight, appearance, and presence/absence of menarche than by pubertal status. In fact, BMI and menarche were the most important aspects identified by the EQS model that led to good body esteem in females. Also, girls who showed low satisfaction with their bodies, as a consequence of the struggle to accept and to provide a mental integration of these pubertal changes, also had low self-esteem.

The sole physical factor that influenced body esteem in male adolescents was height. In addition to height, peers' opinions and appearances (BES subscales) and concerns about appearing tall and brawny (BIS subscale) also influenced self-esteem according to a recent study of Flament and colleagues (2012).

The drawings supported these data, which were obtained via self-reporting measures. In fact, through the drawings, it was possible to analyze the mental representations of their own bodies along with the satisfaction or dissatisfaction they felt about their bodies. As for female individuals, when menarche appeared, drawings reached a more precise representation of secondary sexual features, making the body even more "personalized." The "personalized" body was very important for reaching a body identity that would be integrated into a global identity at the end of adolescence (Alsaker & Kroger, 2006).

Male individuals' drawings were characterized by good proportions, but few facial and clothing details. For boys, showing their body shapes seemed to be important. Boys who were more satisfied with their bodies drew a small number of clothing details.

This study seemed to confirm that male and female groups enabled us to understand that reaching a body identity followed different trajectories; males were worried about appearing tall and brawny to their peers in order to show their strength. The girls worried more and suffered much more than boys in this developmental trajectory (Berger, Weitkamp, & Strauss, 2009). In male adolescents, physical power assured good body satisfaction and self-esteem, so they welcomed all visible body changes while female adolescents did not. In other words, the visibility of physical changes in male adolescents' bodies was an aspect that made them more satisfied with their bodies and, consequently, with themselves. However, the opposite happened in female individuals. For female adolescents, in fact, pubertal changes such as menarche, weight increases, and larger hips led to constantly decreasing satisfaction with their bodies. The final outcome of this body dissatisfaction was low self-esteem.

This work had several strong points. First, we took into consideration both males and females. This allowed us to understand how tiring puberty can be for both genders and how this varies and has different outcomes, which are more or less dysfunctional and critical. Secondly, the model allowed us to keep multiple variables together and confirm that during puberty more elements acted with different weights. This allowed us to better understand the underlying process. To complete the picture that had emerged, drawings confirmed the quantitative data, giving us a better idea of the process.

Important limitations of this study must be mentioned. First of all, the sample was not balanced for pubertal status. In fact, most of the female individuals were collocated in the "advanced pubertal" and "post-pubertal" levels. During the past few years, the age of menarche had lowered, so many early adolescents, even those who were younger, had just passed menarche (Austin, Haines, & Veugelers, 2009; Bernasconi, 2009).

Secondly, this study was cross-sectional because it compared two different groups, but it would be useful to investigate these EQS models over time through a longitudinal study.

Despite these limitations, the data were promising. It could be interesting to replicate this study with a larger and more balanced sample (including subjects from lower socioeconomic classes) and using longitudinal measures to explore how, during development, body perception and self-esteem changed in the two groups and what factors influence these perceptions.

This study stressed the influence of various individual factors (more or less investigated to date) in both males and females and highlighted the psychological distress and dissatisfaction of adolescents, especially in females. It confirmed the importance of studying this topic in order to generate preventive measures to help adolescents through this developmental task. Reinforcing skills such as self-esteem and the abilities to withstand social com-

parisons with peers and to accept the outcomes of bodily change could help adolescents to face the process of their pubertal development with better preparation and a greater ability to reach a satisfactory image of their "adult body."

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