

Media influence and body dissatisfaction in Brazilian adolescents.

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Abstract

Nowadays, preoccupation with body image has taken on an increasing role, with human behaviour being influenced by the media and by society-imposed "beauty standards". Not achieving the ideal of beauty can cause body dissatisfaction and may lead to low self-esteem. The aim of this study was to evaluate body perception, dissatisfaction with body image and the influence of the media in adolescents. N=450 adolescents aged 14 to 16 years, of both sexes, from public and private high schools participated. Three survey tools were applied: the Figure Rating Scale, the Body Shape Questionnaire and the Sociocultural Attitudes towards Appearance Questionnaire. 47.1% of the public school girls presented some level of dissatisfaction. The girls had a poorer perception of their BI than the boys, judging that they had a thinner figure than in reality. Adolescents internalize messages from the media regarding established beauty standards and experience pressure to achieve a "perfect body", with private school girls being the most influenced. The increased influence of the media on adolescents is related to the increase in body dissatisfaction. Adolescents of both sexes, from different cultures and socioeconomic levels are influenced by beauty standards established by the media which can be determinant to increasing dissatisfaction with the size and/or shape of the body, leading them to unhealthy behaviours aiming to achieve "ideal beauty". Such behaviours are associated with the etiology of eating disorders, which may become a major public health problem.

Keywords: Adolescent, Body image, Sex differences, Body dissatisfaction, Media influence, Public health.

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Introduction

Body Image (BI) is characterized as the perception of the image of the body formed in the mind [1]. BI is thought to be comprised of two dimensions: the perceptive (assessment of body size) and the affective/cognitive (attitudes towards the body) [2]. Understanding BI is fundamental to comprehending physiological and psychological changes with adolescents. It is well established that a high number of overweight and obese adolescents become obese adults and consequently dissatisfied with their BI [3]. Body dissatisfaction derives from a cognitive process of comparison, self-evaluation and self-rejection, which can be managed by education and guidance [4]. Body dissatisfaction is associated with impairment in mental and physical health and related with quality of life [5]. Body

dissatisfaction, referring to subjective dissatisfaction with body size and/or shape, has now been recognised as a public health problem [6]. There are various questionnaires available for determining the degree of dissatisfaction with body appearance, one of which is the Body Shape Questionnaire (BSQ) [7], which aims to assess BI. Adolescent girls are continuously influenced by the media. This may lead them to internalize ideals imposed by society as desirable and recognize them as social standards, making them feel dissatisfied because they do not have an ideal body [8]. Studies have shown that the media disseminate erroneous ideas on the ideal body, transmitting excessive pressure on girls to be thin [9] and on men to be more muscular [10]. The Sociocultural Attitudes towards Appearance Questionnaire (SATAQ) is a tool for evaluating media influence on the individual in which the

constructs evaluated to measure societal influences are internalization (general and athlete), pressure and information [11]. Standards of thinness and beauty may influence an adolescent's perception of his/her body [12]. This self-perception is influenced by environmental factors, including the norms, ideals and values of the dominant culture [13]. It may be supposed that an individual who perceives herself as less than ideal will suffer negative emotions; conversely, an overweight female adolescent with positive feelings towards her body, despite the reality of her body weight, will be less inclined to suffer such negative feelings [12]. The Figure Rating Scale was developed by Stukard et al. for assessing body image perception [14]; it is a scale of silhouettes in which the subject chooses the figure which best represents her.

The aim of the present study was to evaluate body perception, level of satisfaction with Body Image (BI) and influence of the media on students from public and private schools using the Figure Rating Scale, the Body Shape Questionnaire (BSQ) and the Sociocultural Attitudes towards Appearance Questionnaire (SATAQ-3).

Methods

Participants

Four hundred and fifty adolescents from the public and private education systems participated in the study: 236 (52%) were male and 214 (48%) female, aged between 14 and 16 years (15.3 ± 1.2 years). This study was approved by the Ethics Committee for Research on Human Beings, file number 1.351.573. The specific questionnaires were all done concurrently during an interview with two professionals. Students were excluded if their parents refused to give their informed consent.

Demographic and anthropometric measures

Demographic data and habits were recorded using a standardized questionnaire. Anthropometric measurements were taken for height, weight and Waist Circumference (WC), collected using a standard [15]. The equipment used to evaluate anthropometric measurements were an electronic scale (Filizola®-110), a stadiometer (Sanny®) and an anthropometric tape (Sanny®). To examine body fat, the Body Mass Index (BMI) was used, defined as the body mass divided by the square of the body height, expressed in units of kg/m^2 and analysed according to gender and age. WC was measured at the mid-point between the iliac crest and the outside edge of the last rib and was analysed according to Fernandez et al. [16].

Measurements

Figure rating scale

The scale of silhouettes was first proposed by Stukard et al. [14], and a new version was later developed and validated by Thompson et al. [17]. This scale was adjusted for Brazilian

silhouettes in adolescents by Kakeshita et al. [18]. It was developed based on anthropometric measurements and consists of 15 laminated cards. Each picture corresponds to a BMI-expressed as weight (kg) divided by the square of height (m), ranging from 12.5 to 47.5 kg/m^2 with a constant difference of 2.5 kg/m^2 between pictures. The test is applied by the subject choosing one of the cards, arranged in series in ascending order, that best represents the silhouette of his/her body at the moment.

Body shape questionnaire

The Body Shape Questionnaire (BSQ) is an instrument designed to measure dissatisfaction with BI [7]. A Brazilian version of the BSQ for adolescents of both sexes has been previously validated [19]. It contains 34 questions on a 6-point Likert scale, ranging from 1 (never) to 6 (always), spread over 4 subscales: 1. Self-perception of body shape (22 questions); 2. Comparative concern (5 questions); 3. Attitude (5 questions), and 4. Severe alterations (2 questions), to give a score ranging between 34 and 204 points. The higher the score, the greater the dissatisfaction. Based on their BSQ results, the subjects were divided into four levels of dissatisfaction with physical appearance, following the model validated for Brazilian adolescents by Conti et al. [19]: score ≤ 80 (no dissatisfaction with BI); score $>80 < 110$ (slight dissatisfaction with BI); score $>110 \leq 140$ (moderate dissatisfaction with BI); score ≥ 140 (severe dissatisfaction with BI).

The sociocultural attitudes towards appearance questionnaire-3

The Sociocultural Attitudes towards Appearance Questionnaire-3 (SATAQ-3) was developed to refine the measurement of internalization as well as to evaluate the distinctiveness and utility of other dimensions of media influence [20]. This questionnaire has been previously used on a Brazilian population, and its validity has been examined [21]. It consists of 30 items to measure four dimensions of media influence: Subscale 1-Internalization-General (INT-GEN); Subscale 2-Internalization-Athletic (INT-ATH); Subscale 3-Pressure (PRESS); and Subscale 4-Information (INFO). The two internalization subscales evaluate the incorporation of appearance norms promoted by the media into the individual's own identity, up to the point at which he/she wishes or strives to fulfil the ideals. The subscale PRESS contains items that index a subjective sense of pressure from exposure to media images and messages to modify one's appearance. The subscale INFO captures the recognition that information regarding appearance norms is available from media sources [22]. The result is given by the sum of the responses from each element; the higher the score, the greater the internalization of the media messages specific to the element.

Procedure

Scales to assess self-perception (Figure Rating Scale), level of satisfaction with body image (BSQ) and the influence of the media (SATAQ-3) were applied to 450 adolescents. In

addition, the BMI of each adolescent was calculated. The result of each tool was analysed. The correlations between the BSQ and the SATAQ-3 subscales and between BMI and the figure rating scale were calculated. For this study a comparison was made of the results between the sexes and between students from public and private schools.

Data analysis

Descriptive statistics are presented as mean ± standard deviation (± SD), range, and frequency (% values). Fisher’s exact test for categorical variables, Mann-Whitney’s U test for continuous variables and Student’s t-test for normally distributed data with equal variances were performed to compare schools. A chi-square test was used for anthropometric/demographic measurements. Pearson’s correlation was used for the analysis between the BSQ and SATAQ-3 subscales. Statistical analysis was carried out using SPSS for Windows, version 20.0. Statistical significance was set at $p \leq 0.05$.

Results

The information about BMI, weight, height, age, waist circumference and practice of physical activity at school is shown in Table 1. We observed that the boys’ weight and height were higher than the girls’. The BMI value was similar between the groups. We also observed that the boys practiced more physical activity than the girls, mainly in the public school ($P=0.04$). In public school adolescents, no statistically significant differences were observed in waist circumference measurements; whereas in adolescent students in private school it was observed that the girls had smaller waist circumferences than the boys.

Figure rating scale

In their estimates expressed through the figure rating scale, the largest proportion of girls estimated their bodies as underweight, followed by normal weight. Analysis of the BMI revealed that the girls generally had a normal weight, followed by overweight and underweight, with obesity being rare (Figure 1). A statistically significant difference was observed between BMI and the figure rating scale for individuals in the classes underweight ($P<0.001$), normal weight ($P=0.000$) and overweight ($P<0.0001$). It was not possible to analyse individuals with $BMI>30$ statistically due to the low number of adolescents in the sample with this condition.

In the boys’ estimates on the figure rating scale, it was found that most considered themselves as having normal weight following by underweight, with few cases of overweight; none considered themselves obese. Based on the BMI analysis, although most of the boys had normal weight, an important number of adolescents were observed with overweight and some with obesity (Figure 1). There was a statistically significant difference between BMI and the Figure Rating Scale in adolescents in the underweight ($P<0.0003$) and overweight classes ($P<0.0002$). Adolescents in the normal

weight class did not present a statistically significant difference ($P=0.9$). It was not possible to analyse statistically adolescents with $BMI \geq 30$ due to the low number of students in the sample with this condition.

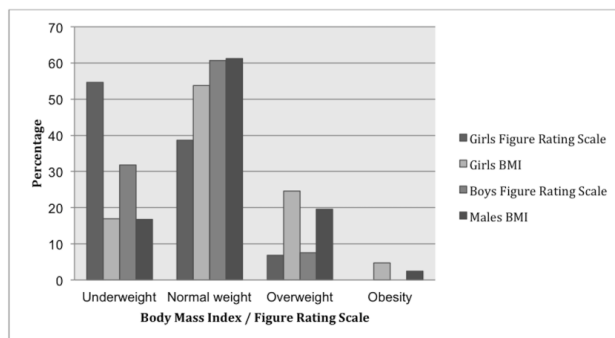


Figure 1. Percentage of boys and girls adolescents classified by body mass index and body self-perception according to the figure rating scale.

SATAQ-3

Analysis of the SATAQ-3 (Figure 2) results for the sub-item INT-ATH showed no differences between the groups. It was observed that private school adolescents are Pressured (PRESS) more by the media than those in public school. Comparing sexes, we observed that the girls are Pressured (PRESS) more by the media than the boys in both private and public school ($P=0.000$ and $P=0.02$ respectively). In the sub-item INT-GEN girls scored higher than boys in both private and public school ($P=0.000$ and $P=0.000$ respectively). It was observed in the sub-item INFO that there was no difference between public schools boys and girls, but private school girls scored higher than boys ($P=0.006$).

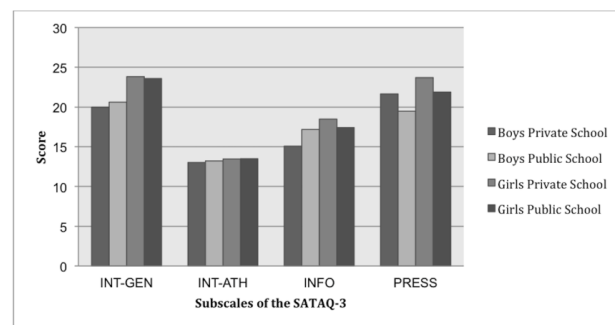


Figure 2. Domains evaluation of the subscales of the SATAQ-3 (INT-GEN: Internalization General; INT-ATH: International Athletic; INFO: Information; PRESS: Pressure) for adolescent girls in public and private schools.

Body shape questionnaire (BSQ)

It was observed that most of the adolescents presented no dissatisfaction with their BI (70%), followed by slight (21.1%), moderate (6.2%) and severe (2.7%) dissatisfaction.

The public school boys presented greater dissatisfaction with their BI than private school boys, with 33.1% of the public school boys having slight to severe dissatisfaction, whereas

only 11.4% of the private school boys had slight to severe dissatisfaction; the latter was the lowest percentage of dissatisfaction with BI found in our study. The public school girls' dissatisfaction with BI reached 31.8% (slight to severe); this is much lower than was found for the private school girls, who reached 47.1% dissatisfaction with BI (slight to severe). The highest percentage of severe dissatisfaction with BI was found for private school girls, whereas the lowest value was found for public school girls (Figure 3).

Correlation between BSQ and SATAQ-3

When the BSQ and the SATAQ-3 subscales were analysed, a positive correlation was observed in all cases. Additionally, a statistically significant difference was observed in all the cases, except between the BSQ and the subscale PRESS for private school adolescents. A weak positive correlation was observed between PRESS and BSQ for public and private school adolescent students ($r=0.182$, $P=0.006$; $r=0.072$, $P=0.28$ respectively), and between INT-ATH and BSQ for private school adolescents ($r=0.169$, $P=0.01$). A slight positive correlation was found between INT-GEN and BSQ (public

school: $r=0.201$, $P=0.002$; private school: $r=0.297$, $P=0.000$), INFO and BSQ (public school: $r=0.330$, $P=0.000$; private school: $r=0.355$, $P=0.000$), for public and private school adolescents, and INT-ATH and BSQ ($r=0.201$, $P=0.000$), for public school adolescents.

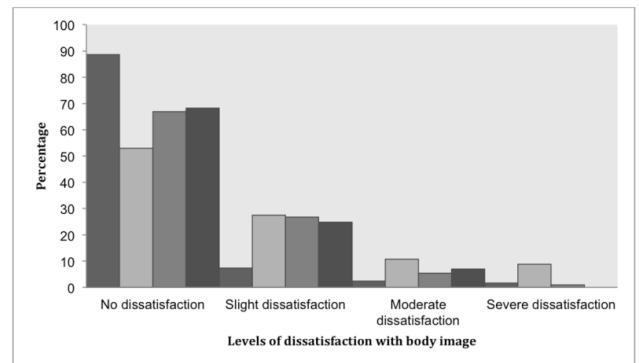


Figure 3. Percentage of levels of dissatisfaction with body image, using the BSQ in adolescents at public and private schools.

Table 1. Demographic/anthropometric and behavioural scale data of adolescent students.

	Private school			Public school		
	Boys (n=123) Average (SD)	Girls (n=102) Average (SD)	P-value	Boys (n=113) Average (SD)	Girls (n=112) Average (SD)	P-value
Age (years)	15.2 (± 1.1)	15.3 (± 1.0)	0.152	15.5 (± 1.4)	15.3 (± 1.3)	0.15 ²
Weight (kg)	67.7 (± 12.4)	56.7 (± 9.4)	0.0002	64.2 (± 19.7)	55.9 (± 12.5)	0.07 ²
Height (cm)	171.3 (± 5.9)	160.5 (± 7.2)	0.0002	168.2 (± 7.5)	159.5 (6.1)	0.000 ²
BMI (kg/m ²)	22.1 (± 7.5)	21.3 (± 3.1)	0.312	21.8 (± 4.1)	21.8 (± 4.5)	0.88 ²
Waist circumference (cm)	76.5 (± 10.9)	71.2 (± 6.7)	0.0002	76.6 (± 9.7)	74.4 (± 10.4)	0.10 ²
Practising school physical education	63 (49%)	33 (32%)	0.0021	60 (53%)	46 (41%)	0.02 ¹

SD: Standard Deviation; ¹Chi-square test; ²t-test

Discussion

Nowadays, preoccupation with body image has taken on an increasing role, with human behaviour being influenced by the media and by society-imposed “beauty standards”. Not achieving the ideal of beauty can cause body dissatisfaction and may lead to low self-esteem. Body dissatisfaction appears to be a growing public health problem and for whom the experience of body dissatisfaction may threaten the psychological and physical well-being of both men and women [5]. Studies have shown that adolescents are particularly susceptible, and dissatisfaction with body image is highly prevalent in this age group [23].

The scientific literature reveals consistently the importance of anthropometric indicators like predictors of variation in body mass; anthropometric indicators are also an instrument for analysing the relationship between anthropometric measurements and body dissatisfaction in adolescents [24].

In a literature review, Stice et al. reported that the pressure to be thin increased the risk of body dissatisfaction, and this was a risk factor for eating disorders [25]. Teenagers from different cultures [26,27] are affected by the negative impact of the body dissatisfaction which can be a predictor of eating disorders (bulimia, anorexia), low self-esteem, and high-risk behaviours such as badly planned diets, addiction to physical exercise and drug abuse [28,29], depressive mood and low self-esteem [27]. In the present study 53.8% of the girls and 60.7% of the boys had a normal weight, with the boys being more content with their BI than the girls according to the BSQ, a finding that corroborates the studies by Baile Ayensa et al. [4] and Alves et al. [30]. Analysis of the private school adolescents showed that the boys had lower levels of dissatisfaction with their BI than the girls, which was not the case in public school adolescents, where both sexes had the same levels of dissatisfaction with their BI. Dissatisfaction with BI in private school girls had the highest indices, reaching 47.1% of slight to severe

dissatisfaction, corroborating the findings of Martini et al. who claim that a high proportion of adolescents express dissatisfaction with their weight, especially females, older adolescents and those of higher socioeconomic level [31]. Baile Ayensa et al. reported that in adolescents aged between 15 and 19 years, girls show greater body dissatisfaction than boys, which supports the proven higher incidence of eating disorders in women than men [4]. In the present study the most of the adolescents were not dissatisfied with their BI, with the percentage of slight to severe dissatisfaction being 30% of the total sample. Petroski et al. reported that 64.2% of adolescents of both sexes were dissatisfied with their BI, a higher percentage than was found in our study [32]. Alvarenga et al. indicated that body dissatisfaction increases as BMI increases [11]; this may explain the indices of satisfaction with BI observed in our sample, since most of the adolescents presented a normal weight, with an average BMI between 21.3 and 22.1.

According to Alvarenga et al. [33], Gondoli et al. [34] and Rodgers et al. [35], the media are considered the main cultural factors influencing BI, together with friends and relatives. In addition, Western mass media instil the message that achieving beauty standards will ensure the ideals of happiness, social status, success and self-worth for women [36-38]. Adolescents of both sexes and from public and private schools as suffering more from the Internalization of the thin-ideal (INT-GEN) followed by media pressure to conform to Western beauty standards (PRESS) were identified in the present study, supporting the findings of Alvarenga et al. [11]. In our study the girls are more influenced by the INT-GEN and PRESS subscales than boys. Media messages about Western beauty ideals (INFO) are most important to private school girls, followed by public school girls and boys, and least important to private school boys. Internalization of the athletic ideal (INT-ATH) had the same level of influence on girls as on boys and showed no difference between public and private school adolescents, with this subscale of the SATAQ-3 obtaining the lowest scores among the adolescents, a finding supported by Lazo et al. [39]. In a study comparing university students from different ethnic groups, Warren et al. [40] noted that the sub-item INT-GEN had the highest mean and INFO the lowest mean for the group of Latino individuals; in our study INT-GEN also was the SATAQ-3 item with the highest score. In a study in public and private school female students aged between 12 and 17 years, Lazo et al. found the highest score for INFO, followed by INT-GEN, PRESS and INT-ATH [39]. These authors observed that the greater the influence of the media, the higher the risk of developing eating disorders; moreover, the INT-GEN and PRESS subscales of the SATAQ-3 predicted body dissatisfaction. SATAQ-3 is a useful tool for identifying the groups at greatest risk of developing image, eating and body disorders [20]; in our study the private school girls were more susceptible to the influence of the media. Considering that adolescents from private schools come from families with higher socioeconomic level than those from public schools, it is possible to affirm that female adolescents with higher socioeconomic level are most influenced by the

media, as well as presenting the highest indices of body dissatisfaction.

In the present study there was slight positive correlation between the BSQ and subscales of the SATAQ-3 in the majority of cases; from this it is possible to conclude that when media influence increases, so too does dissatisfaction with BI in public and private school adolescents.

Comparing the figure rating scale and the BMI, the present study showed that most of the girls estimated that they were underweight according to the figure rating scale; fewer than 40% considered themselves as having a normal weight, only 6.8% considered themselves overweight and none considered themselves obese. However, according to the BMI, most had a normal weight, followed by overweight, underweight and obesity. This finding allows us to conclude that a large part of the sample of female adolescents had a distorted self-image. The same condition was also observed in the boys, but to a lesser extent; the boys with normal weight had no change in their self-image. No adolescent of either sex considered he/she obese according to the figure rating scale, yet 2.4% of the boys and 4.7% of the girls presented this classification according to the BMI. Many studies have reported that girls have a higher body perception than boys [41-43]; nevertheless, our results showed that the girls presented a greater distortion of body image than the boys.

Conclusions

In this study the private school girls presented the highest levels of dissatisfaction with their figure, according to the BSQ. Adolescents internalize media messages regarding established beauty standards (INT-GEN subscale, SATAQ-3) and experience pressure to achieve a "perfect body" (PRESS subscale, SATAQ-3); females are more affected than males, and private school adolescents are more influenced than those in public school. Female adolescents from families of higher socioeconomic status are more influenced by the media and present higher indices of body dissatisfaction. In addition, the increased influence of the media on adolescents is related to the increase in body dissatisfaction. The girls present a lower perception of body image than boys, with greater distortion, and that in many cases they judge themselves as being thinner than they really are.

The results of this study, as well as the findings reported in the literature, allow us to state that adolescents of both sexes, from different cultures and socioeconomic levels are influenced by beauty standards established by the media which can be determinant to increasing dissatisfaction with the size and/or shape of the body, leading them to unhealthy behaviours aiming to achieve "ideal beauty". Such behaviours are associated with the etiology of eating disorders, which may become a major public health problem.

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Conflict of Interest

The authors have stated they have no conflict of interest

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