Body dissatisfaction and associated factors among Brazilian adolescents: A longitudinal study

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**Abstract**

We conducted a longitudinal investigation of body dissatisfaction in adolescent boys and girls, in order to evaluate the influence of biological, psychological, and sociocultural predictors for body dissatisfaction, and its association with eating disorder symptoms. Validated self-administered scales were selected, thereby assessing the various aspects of body image, symptoms of eating disorders, depression, and self-esteem. Four hundred and ninety-eight adolescents (236 girls) participated in the study. Most of the evaluated outcomes remained stable for over a year. Overall, results pointed to sociocultural influence, as evaluated by SATAQ-3, as the main influencing factor on body dissatisfaction in both boys and girls, with less drastic effects seen for both biological and psychological variables. Body dissatisfaction also predicted symptoms of eating disorders. These results produce longitudinal evidence of the importance of sociocultural influence on body image among Brazilian boys and girls.

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1. Introduction

Body satisfaction is the degree of appreciation an individual has of their own physical appearance, particularly body weight and shape, in other words, the satisfaction the individual has with his/her body or specific parts of their body (Menzel, Krawczyk, & Thompson, 2011). On the other hand, body dissatisfaction refers to an individual’s contemptuous or unfavorable opinions of his/her body (Menzel et al., 2011), which has been the target of several investigations in recent years.

Many studies have attempted to investigate the role of body dissatisfaction in the etiology of eating disorders. Nevertheless, the role of other factors, such as social internalization, parental pressure, friends and media, the adoption of body change behaviors, among others, still need to be investigated, particularly in order to establish possible causal associations among these factors and body dissatisfaction (Espinoza, Penelo, & Raich, 2010).

Nevertheless, studies have shown that the non-specificity of scales for male samples might have masked the prevalence of body dissatisfaction among males, suggesting that higher values than previously reported may be uncovered when investigated using adequate tools (Smolak & Stein, 2010). Helfert and Warshburger (2011) highlight that, when particular aspects for each gender are investigated, the association between social pressure and body image is as strong for boys as for girls.

1.1. Sociocultural influence

The Tripartite Influence Model (Thompson, Heinberg, Altbe, & Tuntleff-Dunn, 1999) explains the influence of parents, peers, and the media on body dissatisfaction, mediated by the internalization of the thin-ideal and social comparison. This model is applicable among adolescent girls (Shroff & Thompson, 2006) and a modified version was adapted for boys (Smolak, Murris, & Thompson, 2005). Based on this model, studies have evaluated societal influences on body image, especially among adolescents, and have demonstrated the media to be the main source of influence on body dissatisfaction (Barlett, Vowels, & Sauzier, 2008; Kerry, van den Berg, & Thompson, 2004).

1.2. Biological influence

Another variable that seems to be associated with body dissatisfaction is body mass index (BMI). A larger BMI has been found to be a strong predictor of eating disorder onset (Rohde, Stice, & Marti, 2014). Furthermore, this lends prospective and correlative support to the hypothesis that BMI affects body dissatisfaction (Smolak, 2009). On the other hand, other prospective studies have failed...
to confirm this association (Bearman, Presnell, Martinez, & Stice, 2006).

1.3. Psychological influence

Studies investigating the association between body dissatisfaction and psychological variables in longitudinal cohorts are fundamental to establish the temporal precedence of each of these phenomena (Mellor, Fuller-Tyszkiewicz, McCabe, & Ricciardelli, 2010). Thus, researchers have attempted to elucidate many related factors, including the existing association between self-esteem and body dissatisfaction. Tiggemann (2005), in a study of Australian girls, verified that girls who see themselves as overweight and that have low body satisfaction may be particularly vulnerable to develop low self-esteem. On the other hand, the author cautions that there is still no evidence that low self-esteem is a causal factor for the development of body dissatisfaction.

Studies have also shown that depression scores may precede a decrease in body satisfaction (Schooler & Trinh, 2011). The temporal precedence for the association between body image and depressive behaviors is not clear. Therefore, it is not known whether concern with appearance causes depression or, on the other hand, if individuals who struggle with depression are more susceptible to develop body dissatisfaction (Paxton, Neumark-Sztainer, Hannan, & Eisenberg, 2006).

 Particularly in Brazil, most of the related longitudinal studies are focused on clinical variables, consisting of a target population of patients with eating disorders or those having undergone bariatric and plastic surgeries. Others have investigated body image only as a secondary aspect in evaluations of quality of life and eating behaviors (Lofranco-Prado et al., 2009; Munhoz et al., 2011; Timmerman, Scagliusi, & Cordás, 2010). Therefore, there are few Brazilian studies aimed at investigating the association of temporal precedence between certain psychological aspects and body dissatisfaction, utilizing non-clinical samples and with a particular focus on body image.

1.4. Study aim

Therefore, due to the lack of longitudinal investigations targeting the evaluation of predictors for body dissatisfaction among Brazilian samples, the present study aims to investigate the influence of biological, psychological, and sociocultural predictors for body dissatisfaction, and its association with symptoms of eating disorders, in a prospective approach. We hypothesized that among adolescent girls and boys, high BMI, the sociocultural influence of parents, friends, and the media, low levels of self-esteem, and high levels of depressive symptoms will be predictors of body dissatisfaction over the course of one year. In addition, low levels of body satisfaction were expected to be predictors of eating disorder symptoms in both boys and girls.

2. Method

2.1. Participants

The initial sample consisted of 598 adolescents (269 girls and 329 boys), who studied at the “Instituto Federal de Educação, Ciência e Tecnologia do Sudeste de Minas Gerais” (Federal Institute of Education, Science and Technology of Southeastern Minas Gerais). The entire initial sample gave consent and agreed to participate in the study. Out of these, 100 participants (16.7%) responded to only one of the questionnaires, and were therefore excluded from the sample. Thus, the final sample consisted of 498 adolescents, with 236 girls (47.4%) and 262 boys (52.6%). Out of these, 230 (46.2%) participants took part at all three surveys, 145 (29.1%) participated at time points 2 and 3, 102 (10.5%) responded only to the first and second surveys, and 21 (4.2%) responded at the first and third time points. The average time between baseline and the first follow-up assessment was 27.0 weeks (SD = 2.6) and the average time between the second and the third follow-up applications was 24.3 weeks (SD = 2.3).

2.2. Measures

2.2.1. Demographic and anthropometric data. Participants provided age and gender information. In addition, self-reported values regarding weight and height were also collected. According to Fonseca et al. (2010), these measures are shown to be valid for population-based studies and are recommended, as they are easy to obtain. Weight and height measurements were used to calculate BMI (kg/m²).

2.2.2. Body dissatisfaction. The Body Shape Questionnaire (BSQ) was used to evaluate concern with body weight and shape, thus providing information on the evaluation of body dissatisfaction (Cooper, Taylor, Cooper, & Fairburn, 1987). The questionnaire included 34 items, with responses in the format of Likert scale points: from 1 (never) to 6 (always). A Brazilian version was validated for 10- to 18-year-old adolescents by Conti, Cordás, and Latorre (2009) and obtained adequate validity and reliability (α = .96; ICC = .91; p < .001). Scores ranged from 34 to 204, wherein the higher the score, the greater the body dissatisfaction. According to the obtained score, the respondent was classified as free of dissatisfaction (scores lower than 80), having light dissatisfaction (scores from 80 to 110), moderate dissatisfaction (scores from 110 to 140), or severe dissatisfaction (scores over 140). The internal consistency of BSQ for the present study sample, as evaluated using Cronbach’s alpha values, was .94 for boys and .96 for girls. Moreover, the ConTour Rating Scale (CRS; Thompson & Gray, 1995) was used to assess body dissatisfaction. It consists of 18 figures (nine female and nine male), whose size and weight gradually varied from the thinnest to the most obese. Participants were asked to choose the figure that best represented their body at that moment and the one that represented the body they would like to have. Body dissatisfaction was evaluated through the difference between the body the adolescent would like to have and their actual silhouette, ranging from −8 to +8. Negative values indicate a desire to reduce body size, while positive values show that the body dissatisfaction is directed toward an increase in body size. This tool was validated for Brazilian male and female adolescents by Conti and Latorre (2009) and obtained good indices of validity and reproducibility.

2.2.3. Sociocultural influence. The Sociocultural Attitudes Towards Appearance Questionnaire-3 (SAT-AQ-3) is a 30-question self-report measure used to evaluate societal influence on body image, especially media influence. Items were rated on a 5-point scale, ranging from 1 (totally disagree) to 5 (totally agree). The final score was calculated by the sum of the responses and the score proportionally represented the influence of sociocultural aspects on body image. The items of the questionnaire with the original scale consist of four subscales: (a) general internalization of socially established standards, (b) ideal of athletic body, (c) pressure exerted by these standards on body image, and (d) the media as a source of information on appearance (Thompson, van den Berg, Roehrig, Guarda, & Heinberg, 2004). This questionnaire had its psychometric qualities certified for Brazilian adolescents, with adequate factorial structure, temporal stability, and convergent validity (Amaral, Conti, Ferreira, & Filgueiras, 2015). Cronbach’s alpha values for the present study sample were .93 among boys and .94 among girls. In addition, the Tripartite Influence Scale (TIS)
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