

BODY IMAGE AND SELF-ESTEEM IN ADOLESCENTS FROM THE STATE PUBLIC NETWORK OF SALVADOR-BAHIA¹

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ABSTRACT. Objective: To analyze an association between dissatisfaction with body image and self-esteem of adolescents enrolled in the public elementary school system in Salvador - Bahia. Methods: Participated in this cross-sectional study 860 adolescents aged 10 to 19, of both sexes from the 7th to the 9th year, enrolled in twelve medium-sized schools of the public elementary school system in full shift, in the city of Salvador, Bahia. Self-esteem was assessed through the Rosenberg Self-esteem Scale and body image dissatisfaction by the Body Shape Questionnaire. Demographic and socioeconomic data, sexual maturation, anthropometric status, physical activity level and sedentary lifestyle were evaluated. The association between dissatisfaction with body image and self-esteem was analyzed by multinominal regression for polytomic variables using the statistical program SPSS Version 23.0. Results: Among the adolescents, 24.8% had moderate self-esteem and 27.3% had the lowest scores of this construct. Body image dissatisfaction was identified in 25.2% of the adolescents. The association analysis revealed that adolescents with body image dissatisfaction have 5.61 (95%ci 3.08-10.24) times greater chance of manifesting low self-esteem for females and 3.83 (95%ci 2.03-7.25) times for males. Still among girls, dissatisfaction with body image remained positively associated with moderate self-esteem after adjusting the model (OR: 2.31; 95%ci 1.21-4.41). Conclusion: It was concluded that the prevalence of low and moderate self-esteem was high, and dissatisfaction with body image influenced low self-esteem in both sexes and a moderate among girls.

Keywords: Body image; self-esteem; adolescents.

IMAGEM CORPORAL E AUTOESTIMA EM ADOLESCENTES DA REDE PÚBLICA ESTADUAL DE SALVADOR-BAHIA

RESUMO. Objetivo: Analisar a associação entre insatisfação com a imagem corporal e autoestima de adolescentes matriculados na rede pública estadual de ensino fundamental em Salvador - Bahia. Métodos: Participaram deste estudo de corte transversal 860 adolescentes de 10 a 19 anos de idade, de ambos os sexos, matriculados do 7º sétimo ao 9º nono ano em doze 12 escolas de médio porte da rede pública estadual do ensino fundamental em turno integral, do município de Salvador, Bahia. A autoestima foi avaliada

¹ Apoio e financiamento: Conselho Nacional de Desenvolvimento Científico e Tecnológico – CNPq (Brazil) e Fundação de Apoio a Pesquisa no Estado da Bahia – FAPESB (Brazil): (n.app 0103/2016).

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por meio da Escala de Autoestima de Rosenberg e a insatisfação com a imagem corporal pelo *Body Shape Questionnaire*. Dados demográficos e socioeconômicos, maturação sexual, estado antropométrico, nível de atividade física e sedentarismo foram também avaliados. A associação entre insatisfação com a imagem corporal e autoestima foi analisada pela regressão multinomial para variáveis politômicas utilizando o programa estatístico SPSS, versão 23.0. Resultados: Entre os adolescentes, 24,8% tinham moderada autoestima e 27,3% apresentaram os menores escores desse constructo. A insatisfação com a imagem corporal foi identificada em 25,2% dos adolescentes. A análise de associação revelou que adolescentes com insatisfação com a imagem corporal possuem 5,61 (IC95% 3,08 - 10,24) vezes maior chance em manifestar baixa autoestima para o sexo feminino e 3,83 (IC95% 2,03 - 7,25) vezes para o sexo masculino. Ainda entre as meninas, a insatisfação com a imagem corporal permaneceu associada positivamente à moderada autoestima após ajuste do modelo (OR: 2,31; IC95% 1,21 - 4,41). Conclusão: Foi observada alta prevalência de níveis baixos e moderados de autoestima e que a insatisfação com a imagem corporal influenciou a baixa autoestima em ambos os sexos e a moderada entre as meninas.

Palavras-chave: Imagem corporal; autoestima; adolescentes.

IMAGEN CORPORAL Y AUTOESTIMA EN ADOLESCENTES DE LA RED PÚBLICA ESTATAL DE SALVADOR-BAHÍA

RESUMEN. Objetivo: Analizar la asociación entre la insatisfacción con la imagen corporal y la autoestima en adolescentes matriculados en escuelas públicas estatales en Salvador - Bahía. Métodos: Participó en esta sección transversal un total de 860 adolescentes de 10 a 19 años, de ambos sexos, de 7º a 9º grado, matriculados en doce escuelas medianas en instituciones públicas estatales de enseñanza a tiempo completo, en la ciudad de Salvador, Bahía. La Escala de autoestima de Rosenberg y el *Body Shape Questionnaire* evaluarán, respectivamente, la autoestima y la insatisfacción con la imagen corporal. También se evaluaron los datos demográficos y socioeconómicos, la maduración sexual, el estado antropométrico, el nivel de actividad física y la inactividad física. La asociación entre la insatisfacción con la imagen corporal y la autoestima se analizó mediante regresión multinomial para variables politómicas utilizando el programa estadístico SPSS Versión 23.0. Resultados: Entre los adolescentes, el 24,8% tenían una moderada autoestima y el 27,3% tenían las puntuaciones más bajas de este constructo. La insatisfacción con la imagen corporal se identificó en el 25,2% de los adolescentes. El análisis de asociación reveló que las chicas y los chicos con la insatisfacción con la imagen corporal tenían, respectivamente, 5,61 (IC 95% 3,08 – 10,24) veces y 3,83 (IC 95% 2,03 – 7,25) veces en tener más chances de tener baja autoestima. También entre las chicas, la insatisfacción con la imagen corporal se mantuvo positivamente asociada con una moderada autoestima después del ajuste del modelo (OR: 2,31; IC del 95%: 1,21 a 4,41). Conclusión: Se observó una alta ocurrencia de baja y moderada autoestima y que la insatisfacción con la imagen corporal influyó en la baja autoestima en ambos sexos y en la moderada autoestima entre las chicas.

Palabras clave: Imagen corporal; autoestima; adolescentes.

Introduction

Adolescence is associated with several bodily, hormonal and behavioral changes, which contribute to the formation of adolescents' identity, placing them in a context of greater vulnerability to external factors, which can compromise their physical and mental health. Thus, the external influence becomes significantly relevant and can trigger reflections on the self-esteem of adolescents (Moehlecke, Blume, Cureau, Kieling, & Schaan, 2018).

Self-esteem is a fluctuating and dynamic construct formed by the individual's feelings and thoughts about themselves and their competence, with reflections on positive (feeling of satisfaction and self-worth) or negative (feeling of worthlessness and failure) attitudes (Pop, 2016). This construct is recognized as a central aspect of psychological functioning in adolescence and is an important requirement at this stage of life, due to its relevance in interpersonal relationships, occupational success and school (Pop, 2016; Sbicigo, Bandeira, & Dell'Aglio, 2010). The individual assesses himself according to the feelings and thoughts introduced during the process of forming his identity, so when all or most of the adolescent's attitudes are criticized, he can, through inhibition and fear of exposing himself, develop low self-esteem (Schultheisz & Aprile, 2013).

The conception of self-esteem occurs over time and can be influenced by social and cultural factors, such as family, love and interpersonal relationships, media, school and work environment, health conditions and perception of body image. This mental figure is related to the size, shape and characteristics of the body, in addition to expressing feelings correlated to the particularities of this mental representation, characterizing a complex and multifaceted construct (Schultheisz & Aprile, 2013). For adolescents, body does not only represent beauty, but is also a form of communication and social reach, but the unattainable ideal of beauty imposed by society, mainly conveyed by the media, is unattainable by the vast majority of individuals. This social pressure for an idealized body can result in frustration and become a trigger for body image dissatisfaction (BID) (Silva, Silva, Oliveira, & Nemer, 2012). In this direction, some studies carried out to date support evidence that BID predicts low self-esteem in adolescents (Gatti, Ionio, Traficante, & Confalonieri, 2014; Paxton, Eisenberg, & Neumark-Sztainer, 2006; Polce-Lynch, Myers, Kliewer, & Kilmartin, 2001; Pop, 2016; Van den Berg, Mond, Eisenberg, Ackard, & Neumark-Sztainer, 2010). Self-esteem and BID in adverse conditions can, alone or in combination, lead to a greater occurrence of eating and psychological disorders in adolescents, perpetuating themselves into adulthood.

Given the above, it is considered relevant to examine the aspects contributing to the formation of adolescents' identity, especially body image and self-esteem. However, there are few studies in the literature with the Brazilian adolescent population, which involve the influence of BID on self-esteem. Most publications involve self-esteem as a predictor of body dissatisfaction. Thus, the objective of this research was to analyze the association between BID and self-esteem of adolescents enrolled in the state public elementary school network in Salvador, state of Bahia.

Method

This was a cross-sectional study that is part of a field trial entitled 'Using E-health technology to promote healthy eating in schools: Repercussions of educational practices using an adapted version of StayingFit on the health of adolescents enrolled in public elementary schools in Salvador, state of Bahia', carried out with 860 adolescents from 10 to 19 years old age, of both sexes, enrolled from the seventh to ninth grades of 12 medium-sized schools of the state public system of integral education in the municipality of Salvador, state of Bahia.

To calculate the sample size, the ratio of adolescents under intervention and control equal to 1 (one) was adopted, with a significance level of 0.95 and statistical power of 0.80 (Bland, 2004). Considering an increase of 20% to compensate for eventual losses in the follow-up, the calculations were made using the software GPower v.3.1.3. Students with physical trauma, pregnant women, individuals immobilized at the time of anthropometric measurements and adolescents who did not participate in any of the stages of the primary project were excluded from the study.

Parents or guardians of adolescents who signed the Informed Consent (IC) agreed to their child's participation in the study. After the consent signed by the parents, the adolescent could agree or refuse to participate in the research. The project received a favorable opinion from the Ethics Committee of the School of Nutrition of the Federal University of Bahia (Opinion 893944/14).

Data were collected in 2016. All questionnaires were self-reported by adolescents, except for the socioeconomic questionnaire that was completed by the students' parents and/or legal guardians. Anthropometric measurements were taken in duplicate by trained nutritionists, who were also responsible for explaining to parents and/or guardians and students how the entire data collection process would be carried out.

The dependent variable self-esteem was evaluated using the Rosenberg self-esteem scale (RSES) (Rosenberg, 1965), adapted and validated for Brazilian students aged 10 to 30 years by Hutz and Zanon (2000), with a Cronbach's alpha of 0.90. This scale has ten closed sentences, five referring to positive 'self-image' or 'self-value' and five referring to 'negative self-image' or 'self-depreciation'. The response options are 'strongly disagree', 'disagree', 'agree' and 'strongly agree'. By adding the scores of the answers, the total score is obtained, which varies from 10 to 40 points. The higher the score obtained, the higher the individual's level of self-esteem (Hutz & Zanon, 2000). The self-esteem classification was defined by quartiles, comparing the fourth and third quartile [30 to 40 points (high self-esteem = 0)] with the second quartile [27 to 29 points (moderate self-esteem = 1)] and first quartile [10 to 26 points (low self-esteem = 2)].

Body image, the main exposure variable, was assessed using the Body Shape Questionnaire (BSQ) (Bergström, Stenlund, & Svedjehäll, 2000), an instrument composed of 34 questions whose answers vary on a Likert scale from 1 = Never to 6 = Always. The scale distinguishes two specific aspects of body image: the accuracy of body size estimation and feelings about the body (dissatisfaction or devaluation of physical shape). The classification of results is performed based on the total points obtained and portrays the levels of concern with body image. Scores less than or equal to 80 indicate satisfaction with the image, between 81 and 110 points classify adolescents with mild dissatisfaction, between 111 and 140 moderate, and above 140 points, the presence of severe dissatisfaction with body image (Bergström et al., 2000). However, for analysis purposes, the variable was categorized as satisfied (less than or equal to 80 points = 0) and dissatisfied (greater than 80 points = 1).

Procedures for assessing anthropometric status were recommended by the *Anthropometric standardization reference manual* (Lohman, Roche, & Martorell, 1988). To obtain the weight, a Marte® portable digital scale was used (*Marte Balanças e Aparelhos de Precisão, São Paulo, Brasil*), with a capacity of 150 kg and a precision of 100 g. Height was measured using a Leicester Height Measure® stadiometer, with the reading taken to the nearest millimeter.

The Body Mass Index (BMI), obtained by the ratio of weight (kg) to the square of height (m), was used to diagnose the anthropometric status. The cutoff points in percentiles,

according to age and sex recommended by the WHO – 2007 (De Onís, et al., 2007) were applied. Thus, individuals with a BMI below the 3rd percentile were classified as thin; eutrophy was defined when the BMI value was equal to or greater than the 3rd percentile and less than the 85th percentile; those with a BMI value equal to or greater than the 85th percentile and less than 97 were classified as overweight; and equal to or greater than 97, with obesity.

The level of physical activity of adolescents was evaluated by the indicators of overall accumulated physical activity, obtained by adding the times of practices accumulated in the last seven days. The questionnaire consists of six questions addressing three different domains, namely: commuting to school, physical education classes at school and other extracurricular physical activities, and global physical activity, which is assessed by the practice of physical activities for at least 60 minutes. Active adolescents were those who accumulated 300 minutes or more of physical activity per week and insufficiently active adolescents were those who had 1 to 299 minutes of physical activity per week (World Health Organization [WHO], 2010).

The sedentary lifestyle was evaluated by an indicator capable of evaluating the time spent in sedentary activities, such as watching television. Individuals who reported habitually having two or more hours of screen time per day were considered exposed to sedentary behavior (Council on Communications and Media, 2013).

The evaluation of sexual maturation was performed by self-portrait of breast characteristics, age at menarche, male genitals and pubic hair in girls and boys, using pictures that reproduce different stages of pubertal staging. For girls, onset of pubescence is classified based on stage II of breast development and post-pubescence by age at menarche. For boys, the beginning of the spurt is indicated by Tanner's stage III and the end of the spurt by stage IV of genital development (World Health Organization [WHO], 1995).

Information regarding demographic and socioeconomic conditions was collected using a structured questionnaire or by consulting the identification document, birth certificate or registration form of the school. In addition to demographic variables (gender and age), the goods and services score, according to the Brazilian Criteria of Economic Classification (BCEC) was studied as a marker of socioeconomic level. Each item received a weight equivalent to the inverse of the frequency of possession or presence in the total sample studied. The score for each adolescent was obtained by adding the weights of the respective items. The scoring scale classifies individuals into categories ranging from A (best economic status) to E (worst economic status) (Associação Brasileira de Empresas de Pesquisa [ABEP], 2014).

For statistical analysis purposes, covariates were categorized as follows: 1) anthropometric status [thin/eutrophy (0) or overweight/obesity (1)], 2) sex [male (0) and female (1)], 3) age [<14 years (0); >14 years (1)], 4) pubertal development [pre-pubertal and pubertal (0) and post-pubertal (1)], 5) physical activity [active (0) and insufficiently active (1)], 6) time screen [Non-sedentary <2 hours/day (0), Sedentary ≥2 hours/day (1)], 7) socioeconomic stratum [A, B and C (0); D and E (1)].

Because some studies demonstrate the influence of anthropometric status, age, sociodemographic and economic indicators, physical activity and sedentary lifestyle on self-esteem (Fortes, Cipriani, Coelho, Paes, & Ferreira, 2014; Gatti et al., 2014; Laus et al., 2014; Miranda, 2011; Pop, 2016; Van den Berg et al., 2010), we decided to control the variables in the statistical analyses.

For the processing and construction of the database, EpiData, version 3.1 was used. Descriptive data analysis was performed to characterize the study sample. Multinomial regression analysis for polytomous variables was performed to assess the associations between the main exposure variable and the outcome, using the odds ratio (OR) and its respective 95% confidence interval as an estimator. Results were stratified by sex as this variable is an effect modifier. All analyses were performed using the SPSS statistical package, version 23.0.

Results

Among the 860 adolescents surveyed, the mean age was 14.48 years (SD = 1.43), with the highest percentage observed among those aged between 14 and 19 years. As for the anthropometric status, 71.3% adolescents were normal weight, 6.1% were thin and 22.6% were overweight. Most were post-pubertal (81.40%), physically inactive (81.0%), had a sedentary lifestyle (59.4%) and belonged to the best socioeconomic stratum (93.5%). The distribution of demographic, psychological, biological, economic and lifestyle characteristics, according to sex, can also be seen in Table 1.

TABLE 1

Distribution of characteristics of the sample of adolescents enrolled in public schools in Salvador, state of Bahia, 2018, stratified by sex.

Variables	Female (n = 420) %	Male (n = 440) %	Total (n = 860) %
Age (in years) – mean			14.48 (±1.43)^a
10 – 14 years	47.6	37.5	42.4
<14 – 19 years	52.4	62.5	57.6
Anthropometric status*			
Thinness	3.8	8.4	6.1
Eutrophic	71.8	70.8	71.3
Overweight	16.3	11.8	14.0
Obesity	8.1	9.0	8.6
Pubertal development[†]			
Pre-pubescent/pubescent	9.3	28.4	18.60
Post-pubescent	90.7	71.6	81.40
Physical activity[‡]			
Physically active	11.1	26.6	19.0
Physically inactive	88.9	73.4	81.0
Sedentary lifestyle[#]			
Sedentary	62.9	56.0	59.4
Non-sedentary	37.1	44.0	40.6
Economic indicator^{\$}			
Classes: A+B+C	93.7	93.3	93.5
Classe: D+E	6.3	6.7	6.5

(*) N=849; (†) N=849; (‡) N=847; (#) N= 859; (\$) N= 819

^aMean and standard deviation

In this study, there was a prevalence of 27.3% of low, 47.9% of moderate and 24.8% of high self-esteem in the participants. The proportions of self-esteem were similar between the sexes (Figure 1). The prevalence of BID was 25.2%, with a higher proportion identified in girls (18.9% among boys and 31.7% among girls) (Figure 2).

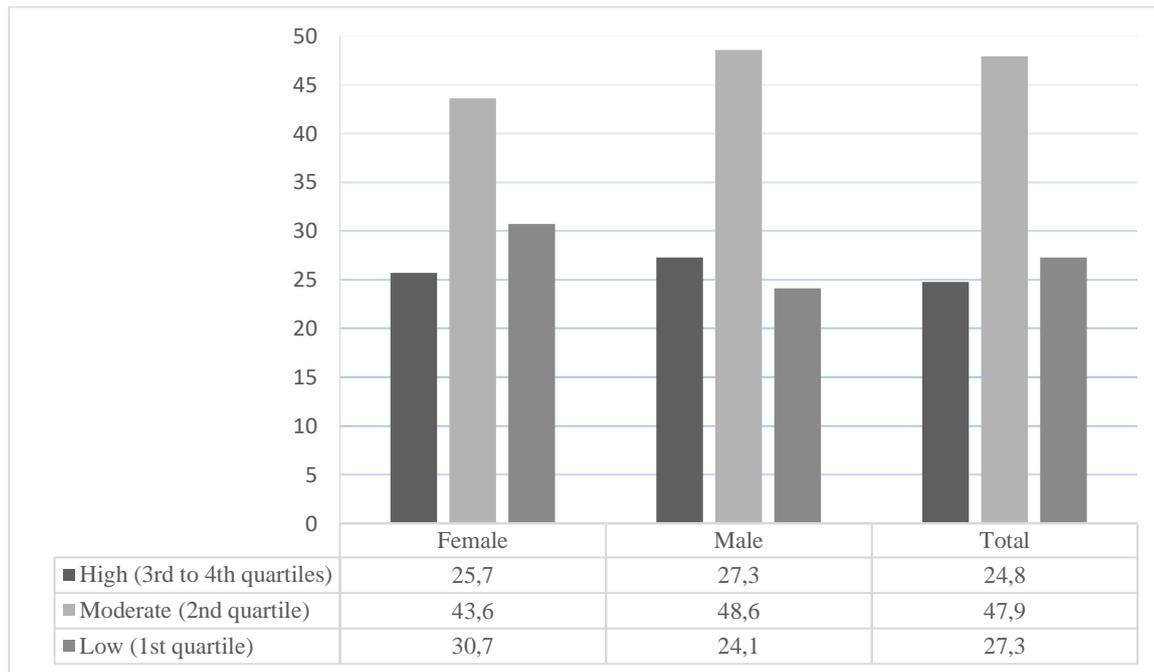
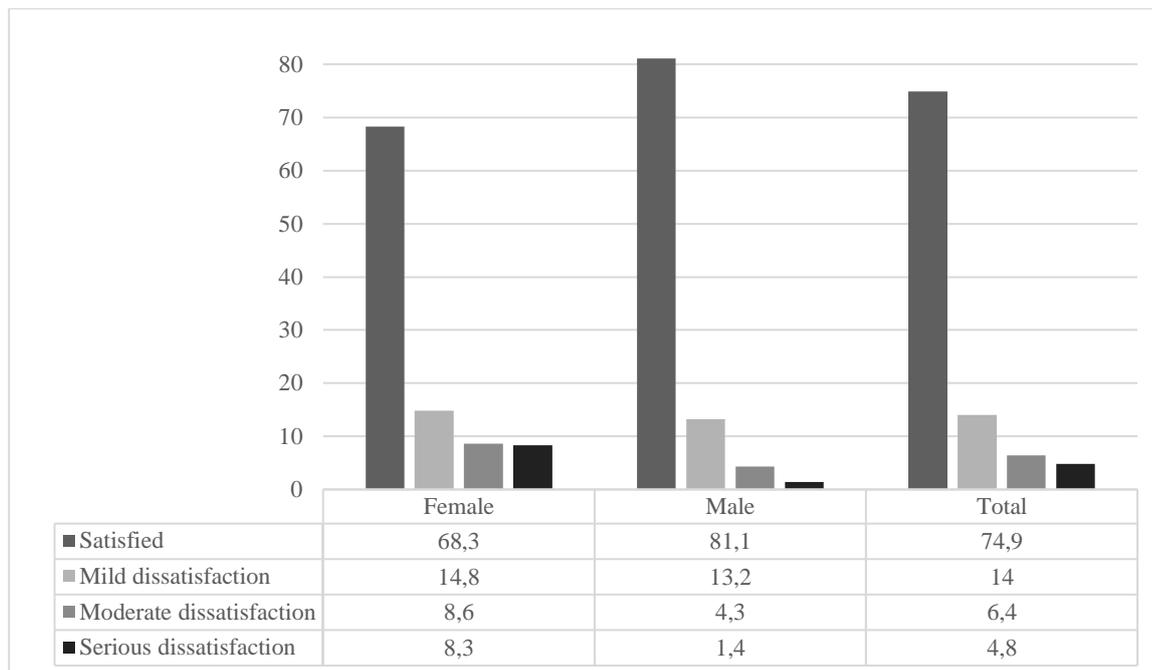


FIGURE 1

Self-esteem of adolescents enrolled in public schools in Salvador, state of Bahia, 2018, stratified by sex and classified by quartiles, with 1st quartile: 10 to 26, 2nd quartile: 27 to 29 and 3rd quartile: 30 to 40. (n=860).

**FIGURE 2**

Body image of adolescents enrolled in public schools in Salvador, state of Bahia, 2018, stratified by sex (n=860).

The results of the crude analysis of the multinomial regression, illustrated in Table 2, revealed a significant, positive association between BID and low self-esteem among female (OR: 5.45; 95%CI 3.24 - 9.17) and male (OR: 4.11; 95%CI 2.33 - 7.24) adolescents. And, girls with negative image perception were more likely (OR: 1.96; 95%CI 1.12 - 3.43) to have moderate self-esteem than their body-satisfied peers. After adjusting the model for the variables age, anthropometric status, socioeconomic stratum, physical activity and sedentary lifestyle, the positive association between BID and low self-esteem for females (OR: 5.61; 95%CI 3.08 - 10.24) and males (OR: 3.83; 95%CI 2.03 - 7.25) was maintained. Even among girls, BID remained positively associated with moderate self-esteem (OR: 2.31; 95%CI 1.21 - 4.41) (Table 2).

TABLE 2

Crude and adjusted multinomial logistic regression analysis of the association between body image dissatisfaction and self-esteem in quartiles of adolescents enrolled in public schools in Salvador, state of Bahia, 2018.

Variable	Crude analysis Self-esteem		Adjusted analysis* Self-esteem	
	Q _{1/4} OR (95% CI)	Q _{2/4} OR (95% CI)	Q _{1/4} OR (95% CI)	Q _{2/4} OR (95% CI)
Body image dissatisfaction				
Female	5.45 (3.24 - 9.17)	1.96 (1.12 - 3.43)	5.61 (3.08 - 10.24)	2.31 (1.21 - 4.41)
Male	4.11 (2.33 - 7.24)	1.79 (0.95 - 3.41)	3.83 (2.03 - 7.25)	1.793 (0.89 - 3.61)

N=860

Reference: 3rd and 4th quartile (high self-esteem); 1st quartile: low self-esteem; 2nd quartile: moderate self-esteem

*Variables adjusted for age, anthropometric status, economic status, physical activity and sedentary lifestyle.

Discussion

The results of this study showed a high prevalence of low self-esteem (27.3%), estimates similar to those found in other studies (Johnson et al., 2004; Polce-Lynch et al., 2001). An important aspect was found when the estimate was stratified by sex. Thus, a higher prevalence of low self-esteem was identified in females (30.7%), a result also recorded by Gatti et al. (2014), in a survey conducted with a mixed sample of adolescent students in the metropolitan area of Milan, Italy, in which girls had lower self-esteem (29.4%) compared to their peers of the opposite sex. Furthermore, Moksnes and Espnes (2013) also obtained high estimates of the lowest levels of self-esteem (27.3%) among Norwegian adolescents.

As for the occurrence of moderate self-esteem, our results showed a higher prevalence in males (48.6%). According to the literature, boys suffer less interference from external factors that impact on the reduction of self-esteem levels (Gatti et al., 2014; Moksnes & Espnes, 2013). In any case, the results are worrying and alarming, since the values found in both sexes are high, representing in adolescents feelings of incompetence, inadequacy and inability to face challenges, risk factors for more serious future psychological disorders (Rosenberg, 1965).

Regarding the prevalence of ICC among adolescents (25.2%), the results are in line with other studies (Jesus, Oliveira, Perini, Cardoso, & Jesus, 2010; Laus, Costa, & Almeida, 2009; Miranda, 2011; Santana et al., 2013). However, the estimates were higher than those identified by Santana et al. (2013) (19.5%), which was also carried out in a sample of teenagers from Salvador enrolled in public educational institutions. In the results stratified by sex, it was possible to observe a higher prevalence among girls, evidence consistent with the results of previous studies with Brazilian adolescents (Fortes et al., 2014; Hargreaves & Tiggemann, 2004). Studies show that the stereotype of unattainable beauty imposed by society places girls in a condition of greater dissatisfaction with their bodies, creating feelings

of discontent and frustration with their weight, physical appearance and body shape (Hargreaves & Tiggemann, 2004; Miranda, 2011; Silva et al., 2012).

The results showed that BID was positively associated with moderate self-esteem only among girls and more significantly with the lowest level of this construct in both sexes. The results of this study confirm those reported by Van Der Berg et al. (2010), in which dissatisfaction was a predictor for reduced self-esteem in all groups of adolescents with normal weight and overweight, as well as in Park and Epstein (2013), where the self-esteem of Korean adolescents was inversely influenced by ICC. In both studies, the lowest levels of self-esteem were found in the female group, as in Gatti et al. (2014). It is a consensus in the literature that the female audience has greater problems related to body esteem, as they value more interpersonal relationships and external opinions about them, a factor that can determine lower levels of self-esteem.

Although the present study has presented interesting results for the scientific community, it is necessary to highlight its limitations. This investigation consisted of self-reported questionnaires by adolescents. However, authors such as Fortes, Morgado and Ferreira (2013) state that self-administered instruments are considered a 'reference standard' in studies with large samples, as they are an easy-to-apply method with a low operating cost. In addition, this is a cross-sectional study, which does not make it possible to establish a temporal relationship between the events and to consider with a greater degree of certainty whether the relationship between them is causal. However, it is a low-cost study that is easy to perform, fast and objective in data collection.

On the other hand, it is important to emphasize the strengths of the study in question, given that it has a representative sample (full-time students from state schools) and a well-designed methodology, with all covariates controlled statistically. Furthermore, this is an innovative study, given that the vast majority of studies analyze the influence of self-esteem on BID, and not the other way around, as was studied in this investigation. Thus, this research serves as a guideline for new projects aimed at the association between BID and self-esteem in adolescents, especially at the national level in order to contribute to a greater theoretical basis on the subject in our country.

Final considerations

The results allowed to conclude that there is a high prevalence of low and moderate self-esteem among the adolescents in this study, especially among girls. The BID proved to be a variable associated with low self-esteem in both sexes. Furthermore, BID increased the occurrence of moderate self-esteem among girls. These constructs, under adverse conditions can, alone or in combination, impair the physical and mental health of adolescents.

Thus, it is expected that the results of this study may contribute to assist in the elaboration and planning of interventions such as psychological and nutritional counseling, aiming at better knowledge on the subject and identification of individuals with a predisposition to eating and psychological disorders, such as those with low self-esteem, thus preventing the advancement of these conditions into adulthood. In addition, there is a need to expand studies, in order to assist in the development and planning strategies to promote greater body satisfaction among adolescents, in view of the increasing BID in our population, affecting younger individuals every day, for the recognition and glorification of thin and perfect bodies that are emphasized in Brazil.

Funding

This study is part of a pilot project that received funding from the National Council for Scientific and Technological Development – CNPq (Brazil) and Bahia Research Foundation – FAPESB (Brazil).

Acknowledgements

To the members of the school community (teachers, staff and students) for their receptivity and support in carrying out this study.

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Received: Jun. 16, 2020

Approved: May 13, 2021

Jaqueline Silva Fonseca: conception, design, analysis and interpretation of data; writing of the manuscript, critical review of the content and approval of the final version to be published.

Karine Brito Beck da Silva: conception, design, analysis and interpretation of data; writing of the manuscript, critical review of the content and approval of the final version to be published.

Rita de Cássia Ribeiro Silva: conception, design, analysis and interpretation of data; writing of the manuscript, critical review of the content and approval of the final version to be published.

Mônica Leila Portela de Santana: conception, design, analysis and interpretation of data; writing of the manuscript, critical review of the content and approval of the final version to be published.