



Relationship Between the Level of Physical Activity and the Body Dissatisfaction of Students

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ABSTRACT

The study aimed to investigate the relationship between the level of physical activity and body dissatisfaction in high school students. This is a study of a quantitative, cross-sectional, exploratory approach to data analysis, carried out with 260 female and male adolescents aged 15 to 18 years old from a public school, located in downtown Teresina- PI. As instruments of data collection, a Body Dissatisfaction Assessment Questionnaire for Adolescents was used, developed by Guillén et al. (2003), the Habitual Physical Activities Questionnaire, originally developed by Russel R. Pate, translated and modified by Nahas (2003). He indicated that there is a higher prevalence of students classified as moderately active (31.5%) followed by the less active (30.8%). As for the level of physical activity, the girls had a percentage of 37.7%, classified as not very active, and 28.3% as inactive, the boys obtained a classification with a percentage of 39.3% moderately active followed by the very active with 27, 9%. The sample identified that the female gender had a higher prevalence in relation to the level of body dissatisfaction 21.81%. Finally, a negative correlation ($p < 0.5$) was observed between the level of physical activity and body dissatisfaction among adolescents. It is concluded that there were significant results on the level of physical activity and dissatisfaction with the body image of the adolescents, showing the correlation between the factors and the importance of further studies related to the theme.

KEYWORDS: Physical activity, body image, schoolchildren, body dissatisfaction.

I. INTRODUCTION

Body image is considered a multifaceted construct that involves an individual's perceptions, thoughts, feelings and behaviors about the size, shape and structure of their body (Bhatt-Poulose, 2016). The concept of body image is defined as the image of one's own body formed in the individual's mind, that is, the way in which the individual perceives his body, which is constructed from childhood to puberty. (Pereira et al., 2016; Petroski et al., 2012).

Dissatisfaction with body image (CI) and the level of physical activity has been identified as a growing problem in the adolescent population in several countries and the knowledge of this situation as a public health issue is evident in the literature due to the health risks it predisposes (Mora et al., 2015).

Adolescence is a complex period of physical, emotional and behavioral changes or social attitudes that reverberate in attitudes related to health, nutrition, physical activity, sexuality and corporeality. Given these facts, the body image needs to be remodeled (Silva, Taquette, Coutinho, 2014; Martins; Petroski, 2015).

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In Brazil, although the high prevalence rates of these constructs are more recurrent in studies than the testimonies of female adolescents (Martins; Petroski, 2015; Martins et al., 2014; Fortes et al., 2013), males in a study on the topic also

reveals concerns about physical appearance (Fortes et al., 2015).

In a study carried out in a Technical School located in the city of Piraju, state of São Paulo. It was found that although (61.54%) of the young people practice regular physical activities, the vast majority are dissatisfied with their body image (80.77%), and no significant correlation was found between dissatisfaction with body image and the level of physical activity among the adolescents surveyed (Lima et al., 2018).

Prevailing a greater or lesser degree of dissatisfaction with body image may be related to physical activity (Lepage & Crowther, 2010). The practice of physical exercises, at least three times a week, can have positive effects on affectivity and body dissatisfaction. In view of this issue, studies have found an association between body dissatisfaction and low levels of physical activity (El Ansari, Dibba, & Stock, 2014). Thus, physical activity is seen as an important tool for prevention/maintenance and restoration of biological, psychological and social balance, constantly threatened by the sudden changes of modern society (Oliveira, 2011).

In view of this, it is essential to identify dissatisfaction with the body image and level of physical activity of adolescents, due to the large number of adolescents affected, the relative stability of the problem and the various health damages that can be caused (Yager et al., 2013).

Furthermore, the present study may provide subsidies for the inclusion of this topic in the school curriculum, since teachers are not prepared to address this content and guide young people regarding excessive concern with the body and the consequences to health (Claro et al., 2014).

Based on what has been exposed and taking into account the aspects mentioned about the practice of physical activity and body image, the present study sought to investigate the relationship between the level of physical activity and body dissatisfaction in high school students from the Centro Estadual de Tempo Integral (CETI) Zacarias de Góis (Liceu Piauiense).

II. METHODOLOGY

A descriptive, quantitative cross-sectional study was carried out, comprising the population of high school students from the Centro Estadual de Tempo Integral (CETI) Zacarias de Góis (Liceu Piauiense) in the city of Teresina - Piauí. From the population of 822 students enrolled in this institution, a sample of 260 students was selected for the study, for convenience, comprising the years (1st, 2nd, 3rd), male and female aged between 15 and 18 years old.

Inclusion criteria were all students who were properly enrolled at school and present in the classroom at the time of the research. The classes were chosen through a lottery, where the only criterion adopted for exclusion was the student's lack of interest in participating in the test.

Data collection took place on a day predetermined by the researchers, initially all the procedures and objectives of the

research were explained and any doubts were resolved. All students under 18 years of age were instructed to ask their parents or guardians to sign the Free and Informed Consent Term (FICT) and the Assent Term that authorized them to participate in the study. After delivery of the terms, the subjects answered the research instruments.

For the assessment of body dissatisfaction: the instrument used was the questionnaire “A Escala Evaluación de Insatisfacción Corporal para Adolescentes” (EEICA) developed by Guillén et al. (2003). The Portuguese language version was adapted and validated by Conti, Slater and Latorre (2009). The EEICA assesses the body dissatisfaction of young males and females, aged between 12 and 19 years, as well as obtaining information regarding the frequency of behaviors related to body care, body perception, family and social influence, in which it will be body image (dis)satisfaction was analyzed.

This scale is composed of 32 self-completion questions in the form of a Likert-point scale, with a variation of 6 response categories: 1 - never; 2 - almost never; 3 - sometimes; 4 - often; 5 - almost always; 6 - always (Conti et al., 2009).

The analysis took place through the verification of the score and punctuation of the questionnaires. In the Body Dissatisfaction Assessment Scale for Adolescents (EEICA) the score is calculated as follows: questions with a positive direction (questions 1-5, 7-9, 11-17, 19, 20, 22-26, 28, 30 and 31) receive the value 0 for the answers “never”, “almost never” and “sometimes”; the value 1 for the answer “many times”; the value 2 for the answer “almost always”; the value 3 for the answer “always”. The questions with a negative direction (questions 6, 10, 18, 21, 27, 29 and 32) assume the value 0 for the answers “always”, “almost always” and “many times”; the value 1 for the answer “sometimes”; the value 2 for the answer “almost never”; the value 3 for the answer “never”. The score is calculated by the sum of the answers and varies from 0 to 96 points. The higher the score, the greater the youth's body dissatisfaction (Conti et al., 2009).

The level of physical activity was analyzed using the questionnaire “Habitual physical activity level” originally developed by Russell R. Pate and translated and modified by Nahas (2003). This instrument for assessing the level of physical activity is subdivided into daily occupational activities and leisure activities. It consists of 11 questions, which, in the end, lead to the classification of subjects as inactive (0 to 5 points); little active (6 to 11 points); moderately active (12 to 20 points) and very active (21 or more points).

To characterize the population, an analytical descriptive statistical study of the sample was carried out through absolute (n) and relative (%) frequencies and dispersion measures (mean and standard deviation), as well as the Shapiro-Wilk test was used to verify if the data will follow a Normal distribution.

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To compare the means, the Mann-Whitney U test was used for independent samples with two categories, and the Kruskal Wallis H test for independent samples with more than two categories. To analyze the relationship between the variables, Spearman's correlation was used.

Data were tabulated in a Microsoft Office Excel spreadsheet and analyzed using the IBM Statistical Package for the Social Sciences version 20.0 program. The significance level adopted was $\alpha = 0.05$. To present the results, tables and graphs were used.

III. RESULTS AND DISCUSSION

Table 1 shows the profile of the high school students evaluated. The sample was characterized by a total of 260 individuals, being 138 (53.1%) female and 122 (46.9%) male. It is observed that the average age of the students was 15.77 ± 1.03 years. The table indicates that there is a higher prevalence of students classified as moderately active (31.5%) followed by students classified as not very active (30.8%).

Table 1 – Profile of high school students from a public school in Teresina – PI.

Variables	n	%
Year of high school		
1° year	95	36,5
2° year	74	28,5
3° year	91	35,0
Gender		
Feminine	138	53,1
Male	122	46,9
Age		
14,0	24	9,2
15,0	91	35,0
16,0	77	29,6
17,0	58	22,3
18,0	9	3,5
19,0	1	0,4
Average \pm Standard deviation	$15,77 \pm 1,03$	
Class. physical activity		
Inactive	51	19,6
Moderately active	82	31,5
Very active	47	18,1
Little active	80	30,8

Source: Direct Search

According to studies by Filho, Campos and Lopes (2014), although encouraging the practice of physical activity in adolescents is consensually important in the prevention of chronic degenerative diseases, a recent meta-analysis study showed that there is great variability in the prevalence of physical inactivity between adolescents in Brazil, ranging from 2.3% to 93.5%, with 60% of the studies indicating a prevalence of physical inactivity according to the World Health Organization. Physical activity. Brasília: 2014.

Available at: Accessed: March 23, 2019. prevalence of more than 50% of physical inactivity in the different regions of Brazil.

Table 2 shows that there was a higher prevalence of little active girls (37.7%), while boys (39.3%) were mostly classified as moderately active. When comparing the genders, there was a statistically significant difference ($p < 0.05$) between them, where boys (27.9%) were more active than girls (9.4%).

Table 2 - Level of physical activity by gender of high school students from a public school in Teresina - PI.

Physical activity	Gender				p-value
	Feminine		Male		
	n	%	n	%	
Inactive	39	(28,3)	12	(9,8)	<0,001
Moderately active	34	(24,6)	48	(39,3)	
Very active	13	(9,4)	34	(27,9)	
Little active	52	(37,7)	28	(23,0)	

Caption: p-value = Pearson's Chi-square test. Source: Direct Search.

As for the variable level of physical activity, in relation to gender, girls had a percentage of 37.7%, classified as little active, and then with 28.3% as inactive, while boys obtained a classification with a percentage of 39, 3% moderately active followed by very active with 27.9%, that is, when comparing the genders, girls have lower levels of physical activity than boys.

According to the World Health Organization (WHO) Global Strategy for Diet, Physical Activity and Health, it is recommended that individuals engage in adequate levels of physical activity and that this behavior be maintained for life. Physical activity programs with different types, frequency

and duration of physical activity are required for different health outcomes (Katzmarzyk et al., 2015).

A study carried out by Barbosa et al. (2014) sought to analyze levels of physical activity in adolescents, and when comparing the level of physical activity (PA) between genders, girls tend to be more inactive than boys.

In the table 3 shows that there was a statistically significant difference in gender and physical activity level in relation to body dissatisfaction. Girls had a higher average (21.81) and were more dissatisfied than boys (15.16) and in terms of physical activity, those who were classified as less active had higher levels of body dissatisfaction than the most active.

Table 3 – Scores referring to body dissatisfaction (EEICA) of high school students from a public school in Teresina - PI.

Variáveis	Score		
	Average	Standard deviation	p-value
	18,69	14,12	
Year of high school			
1° year	19,19	14,96	0,345 ^a
2° year	16,20	10,85	
3° year	20,20	15,40	
Gender			
Feminine	21,81	15,10	<0,001 ^b
Male	15,16	12,06	
Age			
14,0	18,50	10,35	0,585 ^a
15,0	19,73	16,07	
16,0	16,74	12,52	
17,0	20,16	14,27	
18,0	16,78	15,31	
19,0	12,00	0,00	
Class. physical activity			
Inactive	22,75	14,59	<0,001 ^a
Little active	18,63	14,26	
Moderately active	19,96	15,75	
Very active	12,19	6,48	

Caption: a = Krusal-Wallis H test; b = Mann-Whitney U test. Source: Direct Search.

The female students who constituted the study sample are more dissatisfied with their body image in relation to the opposite gender. The sample identified that the female gender had a higher prevalence in relation to the level of body dissatisfaction 21.81%, while the male gender 15.16%.

According to Costa and Machado (2014), the volume of research highlighting the need for reflection on the implications of demands on the body and its image grows every day and their acceptance is essential for adolescents to be able to safely situate themselves in socializing with their peers. On the other hand, dissatisfaction with their body image generates difficulties that may affect social

relationships and the process of identity and self-esteem formation.

A well-established finding in the literature is that girls have greater body dissatisfaction than their male peers, regardless of age. Research in different cultural realities, including Brazil, has corroborated these results, revealing high levels of body dissatisfaction among girls in the adolescent age group. In a similar study carried out by Marques et al. (2016) point out the degree of dissatisfaction in young people of both sexes, with the percentage of dissatisfied being 54.7% and 45.3% in females and males, respectively, showing a greater predominance of girls who are more dissatisfied with their

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lives. body image, reinforcing the result of the study sample in question.

In the same direction, the studies carried out by Conti et al. (2013) when evaluating Brazilian girls and boys, observed some significant changes over a year, such as an increase in the prevalence of dissatisfaction among girls and a reduction in the prevalence of dissatisfaction among boys.

This finding was evidenced in a longitudinal study by Amaral (2015) carried out with adolescents from two cities in Minas Gerais, which showed greater internalization of the ideal of beauty in females at three different moments of evaluation.

The baseline data from the study sample also indicate that girls are more influenced to meet beauty standards, explaining why girls are more likely to be dissatisfied with their body image compared to boys, since the score mean was higher in females compared to males, and, despite not being significant, this difference was close to the significance level. The results observed in this study indicate that there is a relationship between body dissatisfaction and the level of physical activity (<0.001), revealing in this sample that the lower the level of physical activity, the greater the body dissatisfaction of the adolescents surveyed.

In investigations on body satisfaction and association with the current level of physical activity, Matias et al. (2010) and Andrade, Amaral and Ferreira (2010) show in their results that sedentary adolescents are more dissatisfied with their bodies, that is, highlighting the prevalence of dissatisfaction with the body image of less active individuals.

Although the prevalence of body image dissatisfaction was high in the group of girls, the level of dissatisfaction is opposite between the sexes. At the same time, girls show a desire for smaller silhouettes, while boys, desire to have larger silhouettes. These data are similar to those obtained in other studies that report that, regardless of their mass, girls, in general, want to be thinner, that is, to reduce their body silhouette, while boys want stronger, more robust bodies, hence larger silhouettes (Petroski, Pelegrini, Glaner, 2012; Duca et al., 2010; Holsen, Birkeland, 2012).

Braga, Molina and Figueiredo (2010) report that this inequality between girls and boys can be deduced, among several factors, by the susceptibility of both sexes to the current beauty standard in which there is an overestimation of the thin body for girls and muscular bodies. and good for the boys. On top of that, these differences may be marked by cultural influences, through which girls, from childhood to adulthood, are oriented, nurtured, in the pursuit of physical activity for aesthetic purposes, with the objective of losing weight, looking for a slim body. As for the boys, they are encouraged to practice sports, with competitive characteristics, the search for strength and a high standard of performance. Due to these differences, strategies that involve better body perception and acceptance among adolescents must be conducted differently for each sex.

In the table 4 shows a negative and significant correlation ($p < 0.05$) between the level of physical activity and body dissatisfaction, thus indicating that the higher the level of physical activity, the lower the level of body dissatisfaction.

Table 4 - Correlation of Body Dissatisfaction Scores (EEICA) with the level of physical activity of high school students from a public school in Teresina - PI, 2019.

	Score	
	R	p-value
Physical activity	-0,225	<0,001

Caption: r = Spearman's correlation coefficient. Source: Direct Search.

The study sample expressed significant results on the level of physical activity and dissatisfaction with the body image of the adolescents in question, evidencing the correlation between the factors.

For Santos et al. (2014) it is important to highlight that at this stage of life, aesthetic appearance gains special attention from boys and girls, with the body being a possible source of frustrations that lead them to adopt risky behaviors.

We can consider physical activity in adolescence as an important mediator to form positive concepts about the body, confirming benefits to psychological health, especially for self-esteem and well-being.

In recent years, researchers began to investigate the construct of positive and negative body image, which was considered an advance in studies, since it emphasizes the concept of body image more than its pathological aspects (Halliwell, 2015).

Still Halliwell (2015) satisfaction with body image involves accepting and appreciating one's own body as it is, and body dissatisfaction would be the non-appreciation with your image, it is not being pleased with the appearance of your body. Despite this, studies have demonstrated moderate to high correlations between positive and negative body image measures (Tylka & Wood-Barcalow, 2015).

Given this aspect, these results may suggest that the practice of physical activity is associated with an improvement in psychological well-being, which is directly related to a positive body image.

According to Piran (2015) there are several experiences that change the form of relationship with one's own body and, as a result, body image, stands out for physical care with the body, having as protective factors the pleasurable engagement in the practice of physical activities, security in relation to the social environment, suggestions for self-care

and, finally, pleasurable connections in relation to body satisfaction.

Previous studies are compatible with the current one, in which they report that the practice of physical activity is associated with improvements in satisfaction with body image (CI). Bringing a reflection that dissatisfaction with one's own body, that is, with the image one has of it, may be one of the main reasons that lead people to start a physical activity program (Gonçalves; Campana; Tavares, 2012).

Reinforcing this hypothesis Ferrari et al. (2012) report that, in this way, the level of physical activity is related to the way of controlling overweight and increasing the individual's body awareness, factors that can positively influence a person's relationship with their body image, bringing with it satisfaction with their body image. your body due to the physical responses provoked by physical exercise.

Corroborating the results of this study, Tiggemann (2015) reports that young adolescents with positive body image are more likely to engage in pleasurable physical activities, evidencing the relationship between the positive aspect of body satisfaction and physical activity.

In this way, the practice of physical activity helps in the development of positive concepts about the body in adolescence, favoring self-esteem in relation to satisfaction with body image, and psychological well-being.

IV. CONCLUSION

From the results obtained, it can be seen that girls showed lower levels of physical activity and are more dissatisfied with their body image than boys, who showed higher levels of physical activity and less body dissatisfaction. Thus, the present study found a negative correlation between the level of physical activity and body dissatisfaction among adolescents, that is, as the level of physical activity increases, the rate of body dissatisfaction among adolescents decreases. The study of body dissatisfaction and the level of physical activity have been the subject of studies in recent years and, however, investigations regarding the proposed factors are still minimal. Thus, the results obtained between both genders point to the importance of deepening the studies related to the components of dissatisfaction with body image among adolescents and their relationship with the level of physical activity.

In this way, it is possible to suggest that further studies be carried out on this topic, using other measurement protocols (questionnaires, tests and scales), in the same way as carrying out a longitudinal study, verifying other variables to obtain more precise and specific results, being feasible to carry out interventions that consolidate the practice of physical activities for both active and inactive young people.

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