

Factors associated with physical inactivity in adolescents aged 10-14 years, enrolled in the public school network of the city of Salvador, Brazil

Fatores associados à inatividade física em adolescentes de 10-14 anos de idade, matriculados na rede pública de ensino do município de Salvador, BA

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Abstract

Objective: To investigate the factors associated to the physical inactivity among teenagers in Salvador, BA. **Methodology:** A cross-sectional study was made with 803 teenagers from 10 to 14 years old, enrolled in public high schools in Salvador, BA. Information concerning physical activity levels (dependent variable), sedentary behavior, demographic, anthropometric, socioeconomic and maternal characteristics (independent variables) were collected. The Poisson multivariate analysis was chosen to analyze the statistical data. **Results:** The prevalence of physical inactivity was 49,6% (CI 95% 46,14 – 53,06); with higher standards between females (girls: 59,9%; boys: 39%, $p < 0,001$). With the multivariate analyses, it was verified a inverse association between physical inactivity and family economical condition that was classified in D/E ^{worse economical levels} either among males (PR = 0,73, CI 95%, 0,54 – 0,046), as among females (PR = 0,79; CI 95%; 0,66 – 0,96). In complementary analysis according to domains of physical activity, It was observed a significant decrease of physical inactivity in displacement domain between teenagers of lower economical levels (Boys – Classes B1/B2/C1 = 20,6%, C2 = 11%, D/E = 6%, $p = 0,001$; Girls – Classes B1/B2/C1 = 26,7%, C2 = 12,5%, D/E = 10,8%, $p = 0,003$). **Conclusions:** The prevalence of physical inactivity is high among the studied teenagers. Youths with lower economical levels are more active comparing with those with higher economical standards. Moreover, the association between physical activity and economical condition is influenced by physical activity domain that was investigated.

Keywords: Physical inactivity. Prevalence. Teenagers.

Resumo

Objetivo: Investigar os fatores associados à inatividade física em adolescentes de Salvador, BA. **Métodos:** Trata-se de um estudo transversal, realizado com 803 jovens de 10 a 14 anos, matriculados na rede pública de ensino da cidade de Salvador, BA. Foram coletados dados referentes ao nível de atividade física (variável dependente), hábitos sedentários, dados demográficos, socioeconômicos, maternos e antropométricos (variáveis independentes). Optou-se pela análise de *Poisson* multivariada para as análises estatísticas de interesse. **Resultados:** A prevalência da inatividade física foi de 49,6% (IC 95% 46,14 – 53,06); sendo maior entre as moças (feminino: 59,9%; masculino: 39%, $p < 0,001$). Em análise multivariada, verificou-se a associação inversa e estatisticamente significativa entre inatividade física e condição econômica das famílias classificadas em Classe D/E_{Piores condições econômicas}, tanto para os participantes do sexo masculino (RP = 0,73 IC 95% 0,54 – 0,046) quanto para os do sexo feminino (RP = 0,79 IC95% 0,66 – 0,96). Em análise complementar por desmembramento dos domínios verificou-se tendência significativamente decrescente da inatividade física, representado pelo deslocamento, com o declínio das condições financeiras dos adolescentes em ambos os sexos (Rapazes – Classes B1/B2/C1 = 20,6%, C2 = 11,0%, D/E = 6,0%, $p=0,001$; Moças – Classes B1/B2/C1 = 26,7%, C2 = 12,5%, D/E = 10,8%, $p = 0,003$). **Conclusões** A prevalência de inatividade física é alta entre os adolescentes investigados. Jovens de baixo nível econômico são mais ativos em comparação com seus pares de melhor nível econômico. Contudo, a direção da associação entre atividade física e nível econômico é dependente dos domínios da atividade física avaliados.

Palavras-chave: Inatividade física. Adolescentes. Fatores associados.

Introduction

Physical inactivity has been emphasized by the national and international scientific community as an important risk factor for non-communicable chronic diseases (NCDs) in adolescents and adults^{(1),(2)}. Evidence shows that physical activity benefits skeletal health (mineral content and bone density) and blood pressure, dyslipidemia and obesity control⁽³⁾, in addition to improving motor skills, psychological development and the level of social relationships⁽⁴⁾.

According to the World Health Organization (WHO), 60% of the world population does not meet the physical activity recommendations required to improve health⁽⁵⁾. A multicenter study⁽⁶⁾ conducted in 20 countries between 2002 and 2004, using the International Physical Activity Questionnaire (IPAQ), found a prevalence of physical inactivity in adults that varied between 9% and 43%. In Brazil, among participants of the present study, this prevalence was 30.45%. Authors observed that men are more physically active than women in 17 of the 20 countries studied. The results of a study conducted with adolescents aged between 13 and 15 years indicated that only 28.8% of boys and 15.4% of girls met the physical activity recommendations⁽⁷⁾.

In Brazil, there are no data from epidemiological surveys that assess physical inactivity indices in children and adolescents in the entire country. However, the results of certain studies indicate a general steady increase in physical inactivity prevalences in this stage of life, which varied from 5.3% to 94%^{(4),(8),(9),(10),(11)}.

There are several factors that may influence physical activity patterns: individual characteristics such as motivation and motor skills, environmental characteristics, access to work or leisure areas, architectural barriers, time availability and socio-cultural support. In addition, socio-demographic characteristics such as level of education, marital status, sex

and age seem to be factors associated with a physically inactive lifestyle^{(12),(13),(14)}. Another factor that has helped to decrease the promotion of an active lifestyle among adolescents is the adoption of sedentary activities such as watching TV, playing video-games and using the computer. Excessive involvement with intellectual activities (school assignments, reading, qualification courses), work (paid or not) and the absence of Physical Education classes also contribute to such behavioral changes⁽¹⁴⁾. Tobacco and alcohol use are some of the behavioral factors associated with physical inactivity.

Many studies have shown the association between physical inactivity and the occurrence of non-communicable chronic diseases (NCDs), especially circulatory system diseases (CSDs). Cerebrovascular diseases and ischemic heart diseases stand out among CSDs, which totaled 47% of deaths from CSDs in Brazil in 2004⁽¹⁵⁾. Thus, the identification of factors that lead to physical inactivity can contribute to the development of preventive health programs with an emphasis on lifestyle changes aimed at health promotion, thus preventing thousands of adolescents from prematurely developing coronary artery disease.

Consequently, the present study aimed to identify the factors associated with physical inactivity and to describe the physical activity practice during leisure time of adolescents enrolled in the public school system of the city of Salvador, in the state of Bahia, Brazil.

Methods

Study design and sample

A cross-sectional study was conducted with adolescents of both sexes aged from ten to 14 years. These adolescents derived from a broader research project that aimed to study factors associated with iron-deficiency anemia in children and adolescents enrolled in the public school system of the city of Salvador⁽¹⁶⁾.

The sampling process of the original study involved a complex design, including the stratification of schools into two levels (state and municipal), followed by three-stage cluster sampling: the first one was represented by health districts; the second, schools; and the third, students. Due to field logistic questions, students were selected in six of the 12 districts of Salvador, where 117 state schools and 173 municipal schools were identified. State schools included 58,059 students, while municipal schools included 56,555 students. A total of ten students were selected from each of the 58 municipal schools and 23 were selected from each of the 27 state schools to meet the previously defined sample size, totaling 1,200 students. Of this sample of students, all 829 aged between ten and 14 years were selected for the present study.

Considering the fact that this sample was not estimated to evaluate the association being investigated by this study, researchers decided to calculate the a posteriori sampling error. Under such circumstances and based on the prevalence of physical inactivity found in this study (49.6%), the previously adopted sample size enabled the factors associated with the outcome studied to be determined with an error of 3.6%.

Inclusion and exclusion criteria

Students from the public school network of the city of Salvador, aged from ten to 14 years and of both sexes, were included in this study.

The following were excluded from this study: adolescents who were pregnant or breastfeeding; children and adolescents with physical disabilities or who were immobilized at the time of anthropometric measurements; and those with morbid processes that prevented measurements.

Dependent variable

Level of routine physical activity

The questionnaire recommended and validated by Florindo et al.⁽⁴⁾ was used to

assess physical activity frequency. This instrument, which shows evidence of validity and reproducibility, is comprised of 17 questions about routine activities performed in the last 12 months (physical exercises/sports and locomotor activities) and was standardized to score physical activities in minutes (weekly and annually). To obtain this score, the time of activity (in minutes) of a certain activity is multiplied by the number of times that this activity is performed during the week, so that the total amount of time spent on this activity is found. The result of the score was dichotomized in the present study, using the cut-off point of 300 minutes/week of moderate or vigorous physical activities, so that active individuals performed ≥ 300 minutes of activity per week_(reference category) and inactive ones performed < 300 minutes per week⁽¹⁷⁾. This cut-off point is based on the recommendation found in the literature of 300 minutes as the minimum weekly time during which children and adolescents should exercise to achieve the benefits of physical fitness and health⁽¹⁷⁾ (3).

The present study analyzed the percentage of inactive children and adolescents according to type of domain. Thus, researchers used the definition of physical inactivity in the leisure time and transportation domains as individuals not performing any activities in each of these domains assessed⁽¹⁸⁾.

Dependent variables

Sedentary habits – time spent watching TV/playing video-games/using a computer

Sedentary habits were assessed with a structured questionnaire that included questions about the amount of time spent (daily, weekly and on weekends) watching TV, playing video-games and using a computer^{(7),(19)}. In the present study, researchers decided to record the total length of time spent on this habit during the week. The result was stratified into two categories, using the following median as cut-off point: sedentary habits ≥ 3.3 hours and non-sedentary habits < 3.3 hours_(reference category).

Weight and height

Anthropometric data were collected in the school environment by qualified and previously trained anthropometrists. Weight was obtained using an electronic scale with a 150 kg capacity and 100 g accuracy; height was obtained with a SEC stadiometer with a 1.0 mm accuracy. Measurements were taken according to the procedures recommended by the Anthropometric Standardization Reference Manual. Body weight and height were measured in duplicate by two independent anthropometrists, who recorded the results in a proper form, considering a minimum variation of 1.0 mm for height and 100 g for weight. The mean of two results obtained was used when these results maintained the minimum variation permitted. In addition, a third measurement was taken whenever the difference between the first two was higher than the variation permitted, when the mean between the two closest measurements is the final measurement adopted.

The age of students was confirmed in the database of the State of Bahia and City of Salvador Departments of Education, according to the date of birth found in the birth certificate or identity card.

The World Health Organization tables (2007)⁽²¹⁾ were used as a reference standard to assess the anthropometric status, based on percentile values of body mass index (BMI) for sex and age. In addition, the WHO recommendation (2006)⁽²²⁾ was used: low weight ($< 3^{\text{rd}}$ percentile), normal weight ($\geq 3^{\text{rd}}$ percentile and $< 85^{\text{th}}$ percentile_(reference category)), overweight ($\geq 85^{\text{th}}$ percentile and $< 97^{\text{th}}$ percentile) and obesity ($\geq 97^{\text{th}}$ percentile). The overweight and obesity categories were grouped together for the analysis. Consequently, individuals with excessive weight had a BMI in the 85^{th} percentile or higher.

Socio-demographic indicators and environmental and housing conditions

Socioeconomic and maternal characteristics and those of environmental

and housing conditions were collected through interviews conducted with the adults responsible for the students. These interviews were performed by trained and qualified interviewers, who recorded the responses in a standardized questionnaire. The responsible adults were invited to go to the school to be interviewed. Data on home characteristics (home's ownership status, type of construction, main flooring material, main material in the roof and part of the home, number of residents per room) and basic sanitation characteristics (water supply, garbage collection, sanitary sewage system) were collected to construct the environmental index, adapted from the model proposed by Issler and Giugliani⁽²⁴⁾. A score was attributed to each situation; the most favorable one scored 0 and the most unfavorable one scored 1. The sum of these values characterized the environmental and housing condition index. This index was categorized into two strata and the following median was its cut-off point: adequate (score ≤ 04 _{reference category}) and inadequate (score > 04).

The *Critério de Classificação Econômica Brasil Desenvolvido* (CCEB – Developed Brazil Economic Classification Criterion), which was proposed by the *Associação Brasileira de Empresas de Pesquisa* (ABEP – Brazilian Association of Market Research Companies) and estimates the power of purchase of urban families and individuals, was used to calculate the economic level of students⁽²⁶⁾. Families were grouped into better economic status (B + C_{reference category}) and worse economic status (D+E) for the analysis.

Maternal characteristics

Additionally, data on maternal level of education were collected; three levels were considered for this variable, according to school grades: 1st level – up to grade 4; 2nd level – from grades 5 through 8; and 3rd level – secondary education and higher education_{reference category}. Maternal age was classified according to age group: 20 to 34 years; and

35 years or more_{reference category}. Maternal work out of the home was also investigated and this variable was categorized as follows: Does not work out of the home_{reference category} and Works out of the home.

Pilot study

The interviewers and anthropometrists who comprised the research team participated in the training that involved the data collection. After the team was trained, a pilot study was conducted to enable the field logistics to be made adequate and the measurement techniques and instruments to be checked. Pilot study participants were not included in the final sample of the present study. During the entire field work, supervisors periodically assessed the performance of interviewers and anthropometrists and a new group certification was obtained, aiming to minimize possible errors associated with data collection.

Data processing

The Epi-Info software program, version 6.04, was used for data processing and database construction. After questionnaires were reviewed and errors resulting from the initial field coding were corrected, data were input using double data entry.

Statistical analysis

Descriptive analysis was used to characterize the study population. The results of studies have consistently described that boys are physically more active than girls, regardless of the classification criterion for physical activity level and type analyzed⁽⁷⁾. Consequently, researchers decided to perform analyses stratified by sex.

The modeling process was based on a strategy ordered according to the stages described below. First, the variables with a p-value ≤ 0.20 in the univariate analysis were selected, according to the criterion proposed by Hosmer & Lemeshow⁽²⁷⁾. Next, these variables were included in the Poisson

multivariate analysis model. The magnitude of association between risk factors and physical inactivity was described as Prevalence Ratios (PR) and respective 95% confidence intervals (95%CI). Variables with a p-value < 0.05 remained in the adjusted model. Statistical analyses were corrected by the complex sample design, using the set of SVY commands of STATA software (version 9.0).

Ethical issues

The study protocol was submitted to the *Universidade Federal da Bahia* Institute of Collective Health Research Ethics Committee, which assessed and approved it. Parents or responsible adults who agreed with the study signed an Informed Consent Form (ICF).

Results

Of all 829 students aged between ten and 14 years who were initially selected, 26 were recorded as losses (3.13%). These losses occurred due to the child moving out of the city, being transferred to a different school or refusing to participate. Thus, the final sample was comprised of 803 adolescents of both sexes. The prevalence of physical inactivity was 49.6% (95%CI 46.14 – 53.06) and it was higher among girls (female sex: 59.9%; male sex: 39%, $p < 0.001$).

The data showed that 50.6% of participants were females and 49.4% were males and that the majority were aged between ten and 12 years (50.8%). In addition, 48.7% of participants had sedentary habits (time spent watching TV ≥ 3.3 hours). The information about environmental and housing conditions of adolescents revealed that 38.2% came from families that lived in inadequate housing conditions. There were 48.2% and 51.8% of adolescents whose families had an economic condition categorized by ABEP as Classes D/E and Classes B1/B2/C1/C2, respectively. With regard to maternal level of education, 67.6% of mothers had a primary school level (complete or incomplete) and 32.4% had a secondary school

level (complete or incomplete). In addition, 51.8% of mothers worked out of the home. The data also indicated that 13.2% of participants had excessive body weight (Table 1).

The univariate analysis revealed a statistically significant inverse association between physical inactivity and economic conditions categorized as Classes D/E in both males ($p=0.046$) and females ($p=0.016$). The remaining variables analyzed did not show an association with physical inactivity (Table 2).

In the multivariate analysis, physical inactivity and the economic condition of families categorized as Classes D/E maintained a statistically significant inverse association in both males (PR=0.73, 95%CI 0.53 – 0.99) and females (PR=0.79, 95%CI 0.66 – 0.96) (Table 3).

The analyses conducted to assess the influence of the socioeconomic level on different domains of physical activity showed a significant reduction in physical inactivity in the transportation domain in adolescents with lower economic conditions (Boys – Classes B1/B2/C1= 20.6%, C2= 11.0%, D/E= 6.0%, $p=0.001$; Girls – Classes B1/B2/C1= 26.7%, C2= 12.5%, D/E=10.8%, $p=0.003$). There was a slight trend towards the leisure time domain without statistical significance (Boys – Classes B1/B2/C1= 46.7%, C2= 44.5%, D/E= 40.4%, $p=0.14$; Girls – Classes B1/B2/C1= 23.5%, C2= 17.9%, D/E=16.3%, $p=0.09$) (Table 4).

Table 5 shows the main sports activities reported by students during active leisure time. Considering the fact that the questionnaire used enabled up to three active leisure time activities to be observed, researchers decided to show those related to the most frequent activity, represented by the first type mentioned. The inclusion criterion adopted for each activity was the fact of having been reported by at least 5% of participants. The proportion of boys who practiced soccer was more than three times higher (77.9%) than that of girls (25.4%) and the total time spent on this activity was 425.32 and 210.60 minutes/week on average, respectively. Capoeira (a Brazilian

Table 1 - Distribution of demographic, anthropometric, socioeconomic, and maternal in adolescents aged 10 to 14 years of public education in the city of Salvador, Bahia, Brazil.

Tabela 1 – Distribuição das características demográficas, antropométricas, socioeconômicas e maternas em adolescentes de 10 a 14 anos de idade da rede pública de ensino do município de Salvador, BA.

Variable	n	%
Sex		
Male	397	49.4
Female	406	50.6
Age (years)		
10-11.99	247	30.8
12- 12.99	161	20.0
13- 13.99	190	23.7
14 and +	205	25.5
Anthropometric status (BMI)		
Low weight	71	8.8
Normal weight	626	78.0
Overweight/Obesity	106	13.2
Social class (ABEP)		
Classes D – E	387	48.2
Classe C2	273	34.0
Classes B1/B2/C1	143	17.8
Environmental and housing index (median)		
Inadequate (>4)	307	38.2
Adequate (≤4)	496	61.8
Maternal age*		
20-34	226	32.7
≥ 35	466	67.3
Maternal level of education*		
Primary school – up to the grade 4	254	32.3
Primary school – from grade 5 to grade 8	278	35.3
Secondary school and higher	255	32.4
Maternal work out of the home*		
Yes	406	51.8
No	378	48.2
Sedentary habits (hours spent watching TV)		
< 3.3h	391	48.7
≥ 3.3h	412	51.3

* informações faltantes / *Missing information.

martial art that combines elements of dance and music and was created by descendants of African slaves) was reported by a higher number of girls (9.6%) than boys (7.4%).

Boys spent 353.75 minutes/week practicing this activity on average, while girls spent 355.45 minutes/week. In addition, types of activities characterized as recreation

Table 2 - Prevalence ratio (PR) and respective 95% confidence intervals of the association between physical inactivity and selected variables by gender in adolescents aged 10 to 14 years of public education in the city of Salvador, Bahia, Brazil. **Tabela 2** – Razão de Prevalência *bruta* (RP) e respectivos Intervalos de Confiança 95% da associação entre inatividade física e variáveis selecionadas segundo o sexo em adolescentes de 10 a 14 anos de idade da rede pública de ensino do município de Salvador, BA.

Variable	Physical inactivity					
	Male			Female		
	PR	95%CI	p-value	PR	95%CI	p-value
Economic class						
B – C (higher conditions)	1			1		
D – E (lower conditions)	0.728	0.533 – 0.995	0.046	0.794	0.659 – 0.957	0.016
Age						
Less than 12 years	1			1		
More than 12 years	0.856	0.641 – 1.143	0.290	0.973	0.806 – 1.176	0.780
Anthropometric status (BMI)						
Normal weight	1			1		
Low weight	1.435	0.990 – 2.082	0.057	1.082	0.780 – 1.502	0.635
Overweight/Obesity	1.425	0.980 – 2.072	0.063	0.921	0.694 – 1.222	0.569
Environmental condition index						
Adequate	1			1		
Inadequate	0.830	0.611 – 1.132	0.241	0.97	0.800 – 1.188	0.800
Maternal age						
<35	1			1		
≥35	0.991	0.713 – 1.379	0.959	1.050	0.859 – 1.283	0.632
Maternal level of education						
Secondary school or higher	1			1		
Primary school – grades 5 to 8	0.712	0.502 – 1.011	0.058	1.021	0.800 – 1.302	0.868
Primary school – up to grade 4	0.762	0.549 – 1.057	0.103	1.063	0.850 – 1.328	0.103
Maternal work out of the home						
No	1			1		
Yes	0.986	0.736 – 1.322	0.927	1.166	0.962 – 1.412	0.117
Sedentary habits (Hours spent watching TV)						
< 3.3 hours	1			1		
≥ 3.3 hours	0.952	0.711 – 1.274	0.739	1.036	0.854 – 1.256	0.721

(hide-and-seek, tag, roller-skating, jumping rope, rubber band jumping, seven stones, hopscotch), dance and riding a bicycle were not reported by boys. The practice of martial arts was not reported by girls. Types of activities that were reported by less than 5% of participants (basketball, boxing, walking, running, futsal, gymnastics, handball, karate, bodybuilding, swimming, surfing and

tennis) were not included in the table.

Discussion

The prevalence of physical inactivity identified among adolescents aged between ten and 14 years, enrolled in the public school network of the city of Salvador, can be considered to be high (49.6%), where

Table 3 - Prevalence Ratio (PR) and respective 95% confidence intervals of the association between physical inactivity and economic conditions, according to sex in adolescents aged 10 to 14 years of public education in the city of Salvador, Bahia, Brazil.

Tabela 3 – Razão de Prevalência (RP) e respectivos Intervalos de Confiança 95% da associação entre inatividade física e condições econômicas segundo o sexo em adolescentes de 10 a 14 anos de idade da rede pública de ensino do município de Salvador, BA.

Variable	Physical inactivity		
	PR	95%CI	p-value
Male			
Economic class (ABEP)			
B – C (higher conditions)	1		
D – E (lower conditions)	0.73	0.53 – 0.99	0.046
Female			
Economic class (ABEP)			
B – C (higher conditions)	1		
D – E (lower conditions)	0.79	0.66 – 0.96	0.016

Table 4 – Prevalence of physical inactivity by domain of physical activity as the economic level, stratified by sex, adolescents aged 10 to 14 years of public schools in the city of Salvador, Bahia, Brazil.

Tabela 4 – Prevalência de inatividade física por domínios de atividade física conforme nível econômico, estratificado por sexo, em adolescentes de 10 a 14 anos de idade da rede pública de ensino do município de Salvador, BA.

Variable	Physical activity domain			
	Transportation		Leisure time	
	Male (%)	Female (%)	Male (%)	Female (%)
Situação econômica				
Classes B1-C1 (higher)	20.6	26.7	46.7	23.5
Classe C2 (intermediate)	11.0	12.5	44.5	17.9
Classes E-D (lower)	6.0	10.8	40.4	16.3
	*p=0.001	*p=0.003	*p=0.14	*p=0.09

Teste χ^2 de tendência / χ^2 trend test

comparable values were observed among studies that used similar instruments^{(8),(10)}. Results of studies conducted in Brazil indicate that the prevalence of physical inactivity in adolescents varies from 5.3% to 93.5%^{(9),(28),(10),(29),(30),(8),(11),(31),(4),(32)}. Differences in cut-off points to categorize physical activity levels can justify the variability found, apart from the instruments used to diagnose physical inactivity in each study^{(33),(34)}. However, regardless of these differences, alarming prevalences of physical inactivity were found among adolescents in several Brazilian regions⁽³⁴⁾.

The present study revealed that girls are more inactive than boys, corroborating

the results from other studies^{(7),(4),(35),(13)}. In addition, boys and girls have a different relationship with physical activity. This may be attributed to the type of activity proposed and its intensity. It is believed that socio-cultural and biological factors condition the participation of boys in physical activities of a sports nature with a more vigorous intensity and that of girls in physical activities of a leisurely nature with a less vigorous intensity, such as recreational activities and games⁽¹²⁾. According to certain authors, the greater involvement of boys with more vigorous activities can be partly explained by the family culture of encouraging the participation of boys in competitive

Table 5 - Type of physical activity (reported first mode) performed during leisure time in school from 10 to 14 years of public schools in the city of Salvador, Bahia, Brazil.

Tabela 5 – Tipo de atividade física (primeira modalidade relatada) realizada durante o lazer em escolares de 10 a 14 anos da rede pública de ensino do município de Salvador, BA.

Category	Male				Female	
	N	%	Mean in min/ week (SD)	n	%	Mean in min/ week (SD)
Martial arts	20	6.1	241.5 (114.95)	-	-	-
Bicycle	-	-	-	14	6.1	217.85 (179.45)
Capoeira	24	7.4	353.75 (170.62)	22	9.6	355.45 (210.98)
Dance	-	-	-	23	10.1	433.04 (385.66)
Soccer	254	77.9	425.32 (350.41)	58	25.4	210.60 (266.10)
Popular games*	-	-	-	41	18.0	268.90 (272.84)
Volleyball	-	-	-	32	14.0	172.98 (189.29)
Total	298	100	407.21 (331.75)	190	100	261.08 (272.69)

* Brincadeiras realizadas de forma espontânea, ex: picula, pular corda, pega-pega.

* Games that are played in a spontaneous way, such as blind man's bluff, jumping rope and tag.

activities or martial arts, while girls are encouraged to participate in activities that require less physical effort, believing that certain types of activities may contribute to morphological (body composition) changes in girls, which may affect their femininity⁽³⁶⁾.

Both the present study and that conducted by Ceschini⁽⁸⁾ in the city of São Paulo, SP, and by Bastos et al.⁽³⁵⁾ in the city of Pelotas, RS, revealed a different sports category pattern according to sex. In the present study, soccer was the favorite sport among adolescents, although the frequency of participation of boys was higher than that of girls. With regard to girls, their participation in recreational activities, volleyball, dance and capoeira stands out, while these sports categories were rarely reported by boys (Table 4). Ceschini⁽⁸⁾ pointed out that soccer (59.8% of males and 21.6% of females) and bodybuilding (14.5% of boys and 34.5% of girls) were the sports activities most frequently reported; volleyball was mentioned by 1% of boys and 6.1% of girls.

In the study conducted by Bastos et al.⁽³⁵⁾, soccer was the most prevalence sports activity (63.4% of boys and 20.9% of girls), followed by riding a bicycle (44% of boys and 32.8% of girls); dance was mentioned by 5% of boys and 15.3% of girls. With regard

to gender differences, boys apparently preferred competitive sports, widely promoted by the Brazilian media, whereas girls also showed a preference for recreational games. Awareness of these differences is relevant when promoting and increasing adherence to regular physical activity among adolescents. The difference between sexes in adherence to physical activity programs must be seriously considered by intervention program managers in the broad universe of public health, particularly aiming to eliminate social prejudices regarding the female role in physical activity practice.

Socioeconomic condition has been studied as one of the determinants that may influence physical activity habits in youth^{(37),(10),(38),(8)}. In the present study, there was a statistically significant inverse association between physical inactivity and the economic situation of families categorized as Classes D/E (PR=0.73_{boys}; 95%CI 0.53 – 0.99) and (PR=0.79_{girls}; 95%CI 0.66 – 0.96) in both sexes. This finding is in agreement with other studies, which have indicated lower prevalences of physical inactivity among impoverished individuals, when compared to those with a higher economic condition^{(4),(10),(8)}.

An analysis performed to assess the

influence of the economic level on different physical activity domains showed results that pointed to a reduction in the prevalence of physical inactivity in the transportation domain among adolescents with a lower economic level. The fact that these poorer participants were more active in the transportation domain may be attributed to the more frequent use of bicycle and walking as alternative forms of transportation^{(4),(10)}. The results of the leisure time domain found in this study were in agreement with those observed in the literature, in the sense that poorer adolescents tend to be more inactive during leisure time, due to their early involvement with professional activities⁽³⁹⁾ and lack of access to activities because of financial and structural issues^{(40),(41)}. Studies that evaluate the association between physical inactivity in different domains (leisure time, work, household and transportation) and economic level can contribute to the implementation of strategies that promote physical activities under their different contexts in sub-population groups which are more vulnerable to physical inactivity, from an economic perspective.

The probabilistic nature and the successful implementation of the methodological procedures used, in addition to the sensible parameters adopted to select the sample, indicate that the results of the present study

can be expanded to the group of children and adolescents aged between ten and 14 years, enrolled in the public school network of the city of Salvador.

It should be emphasized that one of the main limitations of the present investigation is the fact that this was a cross-sectional study, which affects the interpretation of results in the sense that this type of design prevented causal relations from being established. Thus, the design adopted in this study only enabled associations between events to be observed, so that a cause and effect relationship between these events could not be demonstrated.

The results of this study indicate that the prevalence of physical inactivity is high among the adolescents studied and that those with a low economic level are more physically active than others with a better economic level. However, the association between physical activity and economic level depends on the physical activity domains assessed. In addition, the results show that the pattern of physical activity appears to be influenced by socio-cultural factors. Consequently, the findings of this investigation increase the knowledge available by revealing important evidence on the prevalence of physical inactivity and the factors associated with it.

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