PSYCHOSOCIAL ASPECTS OF PHYSICAL ACTIVITY: DATA ON BRAZILIAN ADOLESCENTS

ASPECTOS PSICOSSOCIAIS DA ATIVIDADE FÍSICA: DADOS SOBRE ADOLESCENTES BRASILEIROS

ASPECTOS PSICOSOCIALES DE LA ACTIVIDAD FÍSICA: DATOS SOBRE ADOLESCENTES BRASILEÑOS

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ABSTRACT

Introduction: Although the benefits of regular physical activity (PA) for adolescents are well-described in the literature, there is little evidence of the role of psychosocial aspects on levels of PA in this population. Objective: To investigate the prevalence and sociodemographic factors associated with enjoyment of PA and preference for leisure-time activities in boys and girls. Methods: A cross-sectional study, with 6529 adolescents (aged 15 to 19 years) enrolled in secondary education in public schools in the South of Brazil. Logistic regression was used to analyze the association between sociodemographic factors and the variables of interest, with data collection using a standardized questionnaire. Results: Boys enjoyed (87.1%) and preferred (44.4%) PA more than girls (enjoyment: 79.2%; preference: 29.5%). Among the boys, enjoyment was associated with family income ($OR_{3\text{-}5\ wages}$=1.53; $OR_{\geq 6\ wages}$=1.62) and, among the girls, it was associated with age ($OR_{19\ years}$=0.28), occupational status ($OR_{workers}$=1.45), and income ($OR_{3\text{-}5\ wages}$=1.35). Preference was associated with age ($OR_{19\ years}$=2.48) and income ($OR_{\geq 6\ wages}$=0.70) among the boys and, among girls, it was associated with area of residence (OR_{rural}=1.47) and occupation ($OR_{workers}$=1.31). Conclusion: Boys (enjoyment: 87.1%; preference: 44.4%) had more positive attitudes toward PA than girls (enjoyment: 79.2%; preference: 29.5%), and some sociodemographic variables appear to be more closely associated with these attitudes than others. Enjoyment was associated with family income for boys, and with age, occupation and income for girls. Preference, in turn, was associated with age and family income for boys, and area of residence and occupational status for girls. ***Level of evidence II, Diagnostic studies - Investigation of a diagnostic test.***

Keywords: Choice behavior; Leisure activities; Motor activity; Pleasure; Students.

RESUMO

Introdução: Embora os benefícios da atividade física (AF) regular para os adolescentes sejam consolidados na literatura, há pouca evidência do papel dos aspectos psicossociais nos níveis de AF nessa população. Objetivo: Investigar a prevalência e os fatores sociodemográficos associados ao gosto pela AF e à preferência por atividades no lazer em rapazes e moças. Métodos: Estudo transversal, com 6.529 adolescentes (15 a 19 anos), matriculados no ensino médio das escolas públicas do sul do Brasil. Usou-se regressão logística binária para analisar a associação entre os fatores sociodemográficos e as variáveis de interesse, coletadas por meio de questionário padronizado. Resultados: Os rapazes relataram gostar (87,1%) e preferir (44,4%) AF mais do que as moças (gostar: 79,2%; preferir: 29,5%). Entre os rapazes, o gosto pela AF foi associado à renda familiar ($OR_{3\text{-}5\ salários}$ = 1,53; $OR_{\geq 6\ salários}$ = 1,62) e, entre as moças, foi associado à idade ($OR_{19\ anos}$ = 0,28), ocupação ($OR_{trabalhadoras}$ = 1,45) e renda ($OR_{3\text{-}5\ salários}$ = 1,35). A preferência foi associada à idade ($OR_{19\ anos}$ = 2,48) e à renda familiar ($OR_{\geq 6\ salários}$ = 0,70) para os rapazes, e, para as moças, à área de residência (OR_{rural} = 1,47) e ocupação ($OR_{trabalhadoras}$ = 1,31). Conclusões: Rapazes (gostar: 87,1%; preferir: 44,4%) tiveram atitudes mais positivas com relação à AF do que as moças (gostar: 79,2% e preferir: 29,5%), e algumas variáveis sociodemográficas parecem estar mais fortemente associadas a essas atitudes do que a outras. Gostar foi associado à renda familiar para os rapazes e à idade, ocupação e renda para as moças. Preferir, por sua vez, esteve associado à idade e à renda familiar para os rapazes e à área de residência e ocupação para as moças. Nível de evidência II, ***Estudos diagnósticos - Investigação de um exame para diagnóstico.***

Descritores: *Comportamento de escolha; Atividades de lazer; Atividade motora; Prazer; Estudantes.*

RESUMEN

Introducción: Aunque los beneficios de la actividad física (AF) regular para los adolescentes sean consolidados en la literatura, hay poca evidencia del papel de los aspectos psicosociales en los niveles de AF en esa población. Objetivo: Investigar la prevalencia y los factores sociodemográficos asociados al gusto por la AF y a la preferencia por actividades en la recreación en adolescentes de ambos sexos. Métodos: Estudio transversal, con 6.529 adolescentes (15-19 años), matriculados en la enseñanza media de las escuelas públicas del sur de Brasil. Se usó regresión logística binaria para analizar la asociación entre los factores sociodemográficos y las variables de interés, colectadas por medio de cuestionario estandarizado. Resultados: Los adolescentes de sexo masculino relataron gusto (87,1%) y preferencia (44,4%) por AF más que las adolescentes de sexo femenino (gusto: 79,2%; preferencia: 29,5%). Entre los varones, el gusto por la AF fue asociado a la renta familiar ($OR_{3\text{-}5\ salarios}$= 1,53; $OR_{\geq 6\ salarios}$= 1,62) y, entre las adolescentes de sexo femenino, fue asociado a la edad ($OR_{19\ años}$= 0,28), ocupación ($OR_{trabajadoras}$= 1,45) y renta ($OR_{3\text{-}5\ salarios}$= 1,35).

La preferencia fue asociada a la edad ($OR_{19\ años}$= 2,48) y a la renta familiar ($OR_{≥6\ salarios}$= 0,70) para los varones y, para las adolescentes de sexo femenino, al área de residencia (OR_{rural}= 1,47) y ocupación ($OR_{trabajadoras}$= 1,31). Conclusiones: Los adolescentes de sexo masculino (gusto: 87,1%; preferencia: 44,4%) tuvieron actitudes más positivas con relación a la AF que las adolescentes de sexo femenino (gusto: 79,2%; preferencia: 29,5%), y algunas variables sociodemográficas parecen estar más fuertemente asociadas a esas actitudes que a otras. El gusto fue asociado a la renta familiar para los varones y a la edad, ocupación y renta para las adolescentes de sexo femenino. La preferencia, a su vez, estuvo asociada a la edad y a la renta familiar para los varones, y el área de residencia y ocupación para las adolescentes de sexo femenino. ***Nivel de evidencia II, Estudios diagnósticos - Investigación de un examen para diagnóstico.***

Descriptores: *Conducta de elección; Actividades recreativas; Actividad motora; Placer; Estudiantes.*

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INTRODUCTION

Although the benefits of regular physical activity (PA) for adolescents are constantly reported in the literature,[1] there is little evidence of the role of psychosocial aspects in PA levels in this population. These aspects, also known as favorable attitudes towards PA, are exemplified by enjoyment and preference. The first comprises a positive affective state that reflects feelings of pleasure, fun, and liking.[2] The latter consists of an evaluative judgment of a person about a set of objects or behaviors that generally results in a decision-making process.[2]

Considering that these positive attitudes are characterized by the individual's evaluation about a particular behavior, the way this person practices and feels about it, which may affect one's decisions and choices,[3] boys usually report more enjoyment[4,5] and preference for active behavior (AB)[4,6-8] compared to girls. However, few studies have investigated the relationship between sociodemographic factors and psychosocial aspects, especially stratifying their analyses by sex. When examining the PA enjoyment, both age[4,9] and area of residence[4,10] did not present significant differences, while occupational situation[4] seems to influence a favorable attitude towards this practice, indicating that adolescents who work have more chances to enjoy PA. For preference, it was found that older participants and those who worked and attended evening classes preferred more PA compared to their peers.[4]

Thus, although the lack of evidence is noticeable and, consequently, there is no consensus about the relationship between enjoyment and preference and sociodemographic factors, it is recognized that the psychosocial aspects are the most proximal in the causal chain of PA practice.[11] Also, considering that activities based on individual choice are able to bring more pleasure and therefore are more likely become habits,[12] investigating the relationship between psychosocial aspects and sociodemographic factors can aid interventions and the promotion of PA among adolescents, whether to stimulate practice or to achieve PA recommendations.

Thereby, the present study aimed to investigate the prevalence and sociodemographic factors associated with PA enjoyment and preference for PA according to sex in adolescents from a state in South Brazil.

MATERIALS AND METHODS

This is a cross-sectional school-based epidemiological study derived from the "Health risk behaviors project in youth of the Santa Catarina State, Brazil", conducted in 2011. The sample comprised high school students (15-19-year-old, M_{age}= 16.3±1.0), enrolled in public schools in Santa Catarina State, South Brazil. The project was approved by the Ethics Committee on Human Research. Passive informed consent was applied. In this case, parents or legal guardians for students <18 years old only signed informed consent if they did not agree with their children participating in research.

Regarding the statistical parameters for sample size calculation, we used prevalence estimated to be 50%, thus taking on the maximum variance of the sample estimators. We chose a confidence level of 95% and maximum error of 2%. As it was a cluster sample, the value found was multiplied by two and then 25% was added to account for possible losses or refusals during data collection, resulting in an estimated sample size of 5,932 adolescents. From a total of 6,569 students that participated in the study, 40 were excluded due to incorrectly filled-out questionnaires.

The cluster sampling procedures were drawn in two steps: selection of schools according to school size, and selection of classes, stratified by school shift and grade. All students in the randomized classes, present in the classroom at the moment of data collection, were eligible. Additional information can be found in a previously published paper.[13]

We used a standardized and validated questionnaire (the Portuguese version can be found in supplementary material). The investigated variables were indicators related to psychosocial aspects of PA, obtained from two questions: "I enjoy doing PA. What would you say about this statement?" and "Which leisure activity do you prefer?". The answer options regarding PA enjoyment (n= 6,502) were a Likert-type scale and grouped as follows: "enjoys PA", and "doesn't enjoy PA". Preference for activities during leisure-time (n= 6,423) were also categorized in two ways: "prefers PA", and "prefers other activities". Sociodemographic factors were the independent variables (e.g., age, area of residence, family structure, period of school attendance, occupational status, family income, and maternal education). The reproducibility analysis of the questionnaire was performed using the test-retest procedure, with an interval of two weeks between applications, and varied between 0.51 and 0.96, indicating the instrument was valid and reliable for this population,[13] with 0.69 for enjoyment and 0.72 for preference.

Statistical analysis

Data analyses were performed using Stata® Standard Edition, version 13.0 (StataCorp LP, USA). We used binary logistic regression with Odds Ratios (OR) and 95% confidence intervals (95%CI), and all analyses were stratified by sex. Variables were simultaneously entered in the adjusted analysis model, with the following control variables: health condition; stress perception; symptoms of sadness; perception of loneliness; and sleep quality. When each outcome was analyzed, the other was also considered an adjustment variable.

RESULTS

Most of the 6,529 participants were female, aged between 15 and 16 years, from urban areas, living with their families and attending morning classes. There were higher proportions of adolescents who worked, with family income from three to five minimum wages, and whose mothers had studied until elementary school. Regarding psychosocial aspects, 82.5% (95%CI: 81.2;83.8) of the adolescents reported to enjoy PA, with the proportion being higher among boys (87.1%; 95%CI: 85.3;88.7) compared to girls (79.2%; 95%CI: 77.0;81.3). For preference, 35.8% of the participants marked the option that concerned leisure-time PA, and preference for leisure PA was more frequent among boys (44.4%; 95%CI: 41.1;47.9) than girls (29.5%; 95%CI: 27.1;32.2).

Concerning PA enjoyment, (Table 1) boys with higher family income were less likely to report PA enjoyment ($OR_{3\text{-}5\ wages}$: 1.53; 95%CI: 1.07;2.18; $OR_{>6wages}$: 1.62; 95%CI: 1.02;2.56) than those with lower income. Nineteen-year-old girls reported having fewer opportunities for this outcome (OR: 0.28; 95%CI: 0.14;0.57) compared to 15-year-old girls. Girls who worked (OR: 1.45; 95%CI: 1.17;1.80) and those with higher family income ($OR_{3\text{-}5\ wages}$: 1.35; 95%CI: 1.04;1.75) presented higher odds of enjoying PA compared to their peers.

For the preference, (Table 2) 19-year-old boys had 2.48 times higher odds (95%CI: 1.09;5.61) of preferring PA compared to the 15 and 16-year-olds. In addition, those whose families had higher income had lower odds ($OR_{>6\ wages}$: 0.70; 95%CI: 0.50;1.00) of preferring PA compared to those with lower income. Girls who lived in rural areas (OR: 1.47; 95% CI: 1.09;1.98) and who worked (OR: 1.31; 95%CI: 1.06;1.63) had higher odds of preferring PA.

DISCUSSION

Almost eight out of ten participants enjoy PA and four out of ten reported preference for AB, with higher prevalence among boys. The higher PA enjoyment among boys corroborates with previous studies.[4,5] This finding was expected, considering that boys feel more physically competent and successful,[14,15] so they perceive fewer barriers to PA and are less influenced by them, and also present higher self-efficacy for the practice of PA.[16,17]

The proportion of preference for leisure-time PA was also higher among boys, corroborating other Brazilian studies[4,8] and from other countries.[7] Sex differences can be partially explained by sociocultural and behavioral aspects.[6,8] While boys are encouraged and stimulated since childhood to do PA and to explore the physical environment, girls are more exposed to sedentary behaviors (SB).[6,8]

Concerning sociodemographic factors, older girls presented fewer chances to enjoy PA. Dissatisfaction and disinterest for physical education classes may also explain the decrease in PA practice with increasing age,[18] affecting the enjoyment of PA not only at school but also in different contexts.[19] Moreover, PA experiences can play a relevant role in individuals' attitudes, with long-term repercussions on how they feel and perceive themselves before their participation in activities.[5,19] If someone presents low levels of self-efficacy and low enjoyment of exercise since childhood, for instance, these attitudes toward PA may remain through the years and, probably, it will become harder for the individual to enjoy PA and to become active.[5] In contrast, in boys, with advancing age, there seems to be no changes in the perception of enjoyment of PA, as also observed by Hyndman and colleagues.[9]

Regarding preference, older boys had twice the chance of preferring an AB, in accordance with Hardman et al.[4] Older boys, despite not practicing, may prefer PA even in the precontemplation and contemplation stages of behavior change, when they do not engage in AB but intend to make it a habit.[20] Another possible elucidation may be associated with the transition to adulthood, with a series of events that are concentrated in a relatively short time, such as going to the university or getting a job, increasing their obligations.[21] On that basis, although they prefer

Table 1. Distribution (n=5,346) and Crude and Adjusted Analyses (n=5,775) of Enjoyment of Physical Activity by Sex (State of Santa Catarina, 2011).

Variables	Boys (n= 2,520)						Girls (n=3,255)					
	n	%	Crude		Adjusted		n	%	Crude		Adjusted	
			OR	95%CI	OR	95%CI			OR	95%CI	OR	95%CI
Age (years) (5,346)												
15	561	86.0	1.00		1.00		748	80.3	1.00		1.00	
16	828	86.6	1.06	[0.73; 1.52]	1.12	[0.72; 1.73]	999	79.3	0.94	[0.71; 1.25]	0.95	[0.65; 1.40]
17	774	88.3	1.23	[0.85; 1.76]	1.36	[0.85; 2.17]	886	79.6	0.96	[0.74; 1.23]	1.05	[0.74; 1.49]
18	261	88.3	1.23	[0.77; 1.95]	1.62	[0.83; 3.16]	183	76.2	0.79	[0.45; 1.37]	1.15	[0.72; 1.83]
19	70	84.5	0.89	[0.44; 1.78]	0.89	[0.30; 2.65]	36	59.0	0.35	[0.17; 0.76]	0.28	[0.14; 0.57]
Area of residence (5,312)												
Urban	1,896	87.3	1.00		1.00		2,142	78.4	1.00		1.00	
Rural	587	86.5	0.93	[0.70; 1.22]	0.81	[0.56; 1.18]	687	82.0	1.25	[0.90; 1.74]	1.01	[0.72; 1.42]
Family structure (5,323)												
Lives with the family	2,432	87.1	1.00		1.00		2,736	79.1	1.00		1.00	
Lives with other people	53	87.9	1.08	[0.40; 2.87]	0.95	[0.34; 2.65]	102	83.7	1.35	[0.79; 2.33]	1.69	[0.95; 3.02]
Period of school attendance (5,436)												
Morning	1,373	87.6	1.00		1.00		1,902	80.4	1.00		1.00	
Evening	1,121	85.8	0.85	[0.64; 1.13]	1.09	[0.75; 1.59]	950	75.2	0.74	[0.58; 0.95]	0.93	[0.69; 1.25]
Occupational status (5,345)												
Does not work	1,648	88.2	1.00		1.00		1,419	81.4	1.00		1.00	
Works	846	85.5	1.27	[0.96; 1.68]	1.11	[0.72; 1.71]	1,432	77.6	1.26	[1.06; 1.51]	1.45	[1.17; 1.80]
Family income (5,301)a												
Until 2 minimum wages	602	84.8	1.00		1.00		1,109	76.3	1.00		1.00	
From 3 to 5 minimum wages	1,275	88.0	1.31	[0.98; 1.77]	1.53	[1.07; 2.18]	1,374	81.4	1.36	[1.14; 1.62]	1.35	[1.04; 1.75]
6 or more minimum wages	599	87.7	1.27	[0.84; 1.93]	1.62	[1.02; 2.56]	342	80.1	1.25	[0.82; 1.90]	1.09	[0.71; 1.69]
Maternal education (5,088)												
Elementary school	1,288	86.3	1.00		1.00		1,676	79.8	1.00		1.00	
High school	766	89.6	1.37	[1.03; 1.83]	1.25	[0.90; 1.74]	801	79.7	0.99	[0.79; 1.25]	1.02	[0.76; 1.37]
College education	286	87.9	1.15	[0.72; 1.86]	0.80	[0.46; 1.40]	271	79.3	0.97	[0.67; 1.42]	0.91	[0.64; 1.29]

OR: odds ratio. 95%CI: 95% confidence interval. a Considering that the minimum wage in 2011 in Brazil was RS545,00. Adjusted for: health condition, stress perception, symptoms of sadness, perception of loneliness, sleep quality, preference for leisure activities and leisure-time physical activity. The variable maternal education presented the higher amount of missing information for both genders (354 missing values (5.42%), being 200 (6.89%) for boys and 154 (4.25%) for girls).

Table 2. Distribution (n=2,293) and Crude and Adjusted Analyses (n=5,775) of Preference for Physical Activity by Sex (State of Santa Catarina, 2011).

Variables	Boys (n= 2,520)						Girls (n=3,255)					
	n	%	Crude		Adjusted		n	%	Crude		Adjusted	
			OR	95%CI	OR	95%CI			OR	95%CI	OR	95%CI
Age (years) (2,293)												
15	288	46.8	1.00		1.00		290	30.9	1.00		1.00	
16	398	42.0	0.82	[0.65; 1.05]	0.78	[0.57; 1.05]	368	28.7	0.90	[0.69; 1.18]	0.90	[0.66; 1.22]
17	368	44.0	0.89	[0.68; 1.17]	0.91	[0.65; 1.28]	331	30.0	0.96	[0.73; 1.26]	0.99	[0.70; 1.40]
18	125	43.0	0.86	[0.63; 1.17]	0.80	[0.57; 1.12]	63	24.9	0.74	[0.54; 1.03]	0.97	[0.67; 1.41]
19	43	63.6	1.99	[1.02; 3.88]	2.48	[1.09; 5.61]	19	36.2	1.27	[0.60; 2.68]	2.16	[0.91; 5.14]
Area of residence (2,278)												
Urban	908	44.2	1.00		1.00		766	27.6	1.00		1.00	
Rural	309	46.0	1.07	[0.80; 1.44]	0.95	[0.68; 1.31]	295	36.9	1.53	[1.20; 1.95]	1.47	[1.09; 1.98]
Family structure												
Lives with the family	1,196	44.7	1.00		1.00		1,029	29.4	1.00		1.00	
Lives with other people	22	29.7	0.52	[0.27; 1.02]	0.55	[0.24; 1.27]	38	33.5	1.21	[0.81; 1.79]	1.15	[0.75; 1.76]
Period of school attendance (2,293)												
Morning	706	47.0	1.00		1.00		701	29.3	1.00		1.00	
Evening	516	38.7	0.71	[0.58; 0.87]	0.81	[0.63; 1.03]	370	30.4	1.05	[0.85; 1.30]	1.13	[0.87; 1.45]
Occupational status (2,293)												
Does not work	805	44.9	1.00		1.00		573	33.2	1.00		1.00	
Works	417	43.8	1.05	[0.85; 1.28]	1.17	[0.91; 1.50]	498	26.7	1.36	[1.14; 1.62]	1.31	[1.06; 1.63]
Family income (2,263)a												
Until 2 minimum wages	309	46.9	1.00		1.00		447	29.7	1.00		1.00	
From 3 to 5 minimum wages	628	45.0	0.93	[0.75; 1.15]	0.91	[0.69; 1.21]	487	29.5	0.99	[0.82; 1.20]	0.87	[0.67; 1.12]
6 or more minimum wages	271	41.1	0.79	[0.59; 1.07]	0.70	[0.50; 1.00]	121	28.8	0.96	[0.72; 1.27]	0.82	[0.62; 1.09]
Maternal education (2,166)												
Elementary school	625	44.2	1.00		1.00		643	30.7	1.00		1.00	
High school	363	43.9	0.99	[0.81; 1.20]	0.89	[0.73; 1.09]	272	27.3	0.85	[0.69; 1.03]	0.88	[0.70; 1.12]
College education	159	49.1	1.22	[0.92; 1.61]	1.29	[0.92; 1.81]	104	29.6	0.95	[0.73; 1.24]	1.05	[0.78; 1.40]

OR: odds ratio. 95%CI: 95% confidence interval. a Considering that the minimum wage in 2011 in Brazil was R$545,00. Adjusted for: health condition, stress perception, symptoms of sadness, perception of loneliness, sleep quality, enjoyment of physical activity and leisure-time physical activity. The variable maternal education presented the higher amount of missing information for both genders (354 missing values (5.42%), being 200 (6.89%) for boys and 154 (4.25%) for girls).

PA, they cannot practice it. It is worth mentioning that data presented here must be interpreted with caution, since the number of 19-year-old adolescents was relatively low compared to other age groups.

Girls who lived in rural areas had a higher chance of preferring PA, in contrast to the literature, which has not found an association between these variables.[4,10] A possible explanation for this finding is that girls who live in rural areas might experience a greater variety of PA, while girls who live in urban areas choose SB[22] due to lack of safety.[23] The provision of environments that enable adolescents to feel more comfortable and confident can reinforce positive attitudes toward AB.[24]

There was no association between family structure and enjoyment or preference for PA. Even though the family represents the main agent able to influence the attitudes of children and adolescents, the community, school, and work counterparts also play a relevant role in the transmission of values and norms.[25] Thus, adolescents disconnect from the people they live with and stop taking into consideration the advice, values, and attitudes of those who previously used to have more influence on them.[25] This happens due to the development of a sense of autonomy and perception of independence, influencing their attitudes[7] and health habits.

Boys and girls who attended morning classes had a higher chance of preferring and enjoying PA, respectively. However, these differences were no longer significant after adjusted analysis. A possible hypothesis for these results may be related to the input of sleep quality, which may be related to school performance.[26] It is recognized that activities developed in the school setting vary according to period of school attendance, especially because most of the students who attend evening classes also work[22] and have less free time to practice PA.[22] It must also be considered that positive attitudes toward AB obtained during the school term can also play a relevant role in the maintenance of an active lifestyle.[24]

When analyzing occupational status, girls who worked had a higher chance of enjoying and preferring PA. This association is possibly related to the way work is viewed, and the concern regarding to career demands, and the confidence to solve problems,[27] with increased possibility of involvement in incentives for PA practice. Regarding preference for leisure-time PA, another study found similar results.[4] Even though these adolescents had little leisure-time,[4] the way they experience and recognize this domain seems to be related to positive attitudes toward PA. No association was found among boys. The question arises as to whether other psychosocial aspects might mediate the relationship between occupational status and sociodemographic variables among boys. From this perspective, we suggest that further investigations be conducted, in order to contribute with explanations about the relationship between these variables.

The participants with higher income were more likely to express PA enjoyment. A possible explanation for the more favorable attitudes toward PA among adolescents with higher family income may be that this group presents better perception and understanding about the importance of AB.[14] Another aspect to be considered is the reduced chance to prefer PA among boys with increased family income. It is observed

that adolescents have excess time[28] and higher preference[8] for SB. The emergence of new technologies brings the need to reflect upon the influence of these activities on the attitudes toward PA, since adolescents with higher purchasing power have more access to electronic devices.[28]

Finally, it was found that maternal education did not seem to affect enjoyment and preference for PA in both sexes, similar to the findings of Barr-Anderson et al.[10] Although adults with higher education tend to be more physically active[29] and that this behavior might influence the habits and attitudes of their children,[30] we again suppose that the perception of psychosocial aspects is probably influenced by other factors not assessed in this study.

In this context, activities must consider the profile and interests of this population, stimulating psychosocial aspects and not just practice for the sake of practice, contributing with interventions that aim to promote a healthier lifestyle. These results might favor the development of future studies, especially focused on PA mediators and the planning and implementation of actions to stimulate enjoyment, individual's choice options, and others psychosocial components. We suggest that adolescents should be given more opportunities to practice, as well as more experiences and choices; also, the activities developed for this population, regardless of its domain, should favor their participation with the aim of encouraging them to engage in active and healthy behaviors.

Given this scenario, some strengths should be highlighted, including sample size and selection, and the representative nature of the study population. Acknowledging that behaviors learned during childhood and adolescence are reflected in adulthood and that the adoption of a physically active lifestyle is associated with several psychosocial and sociodemographic factors, the present findings might assist decisions concerning social and educational measures to increase the practice of PA in the adolescents' daily lives and, consequently, to enhance their active and healthy behaviors in the long term. For example, if girls lose PA enjoyment with increasing age, it is important that, in additional to understanding this phenomenon, new experiences are provided for them so they can discover other forms of PA that can be pleasurable in their lives.

However, our results should be interpreted with caution given some limitations. We grouped patients that marked the alternative "neither agree nor disagree" for the variable "enjoyment of PA" in the "disagree" category. Even though they could have been grouped differently, we chose to classify them in the "disagree" category in order to include in the first category only adolescents who exhibited certainty regarding the enjoyment of PA. It should also be considered that PA enjoyment was examined within all domains, while preference was considered just in leisure-time. Finally, the information does not represent the reality of adolescents from private school or of those in the same age group who do not attend school.

CONCLUSION

Boys enjoyed and preferred more PA than girls. Boys with higher income were more likely to express PA enjoyment, and the older ones had greater chance of preferring this behavior in leisure-time, although those with higher income had reduced chances to prefer PA. Older girls presented fewer chances to enjoy PA, but those who worked and had from three to five minimum wages were more likely to enjoy this behavior. For preference, girls who worked and lived in rural areas had a higher chance for this attitude.

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