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Practice of physical activity on the part of adolescents attending public schools: a descriptive study

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ABSTRACT

Objective: To determine the practice of physical activity on the part of adolescents from public schools in the city of Picos, Piauí. **Methods:** A descriptive study involving a sample of 145 adolescents of both genders aged 12 to 18 years. Data collection occurred from August to December 2010, using a specifically designed form. **Results:** Among the participants, 62.8% were female with average age of 14.8 years (± 3.19). It was observed that 49.7% of the participants were classified as physically inactive. Of these, 86.1% were female (p = 0.000), 58.3% were aged between 12 and 14 years, 8.3% had a high body mass index, 9.7% had altered glucose and 45.8% had high blood pressure. **Discussion:** Female and younger adolescents are more sedentary. This result is similar to the results of other studies on the same subject. **Conclusion:** The regular practice of physical activity offers many health benefits and can contribute to the prevention of chronic non-communicable diseases.

Keywords: Motor activity, Lifestyle, Adolescent Health

INTRODUCTION

In recent decades a transition in terms of the epidemiological profile of individuals has been occurring, especially in developing countries, moving from the predominance of infectious diseases to a greater prevalence of Chronic Non-communicable Diseases (NCDs). These are known for having a prolonged natural history with multiple complex risk factors. In this context, we may highlight diabetes mellitus type 2, obesity and cardiovascular diseases[1]. In Brazil, the NCDs and external causes were the leading cause of death in 2009, accounting for 85% of total deaths[2].

In 2006, the presentation of the first edition of the study Surveillance of Risk Factors and Protection of Chronic Diseases through Telephone Interviews (VIGITEL), showed that 11.4% of Brazilians were obese. By 2007, this figure had risen to 12.9%[3].

The main risk factors associated with these diseases are related to the parameters connected to lifestyle. Among them, the lack of physical inactivity is gaining prominence as one of the factors associated with the development of several chronic diseases, constituting a major problem in terms of public health.

It is now known that physical inactivity, combined with a greater time spent on low-intensity activities such as passive practices that require minimal physical effort, such as watching television, using computers for a long time, playing video games and others, contribute significantly to weight gain in adolescents.

Several studies have been conducted to investigate the relationship between the risk of NCDs and physical activity. The evidence confirms an inverse relationship between the variables. Moreover, the high prevalence of physical inactivity in adolescence increases the likelihood of sedentary adults[4, 5].

The regular practice of physical activity offers many health benefits and may work as a means of prevention, control, treatment or rehabilitation of chronic disorders such as type 2 diabetes.

The benefits of a physically active life in childhood and adolescence are important for the biological process of human growth and development, as it helps to control body weight and blood glucose concentration, and improves musculoskeletal functions. Physical activity also has psychological effects as it improves self-esteem, reduces depression, and enables better social interaction.

The study of physical activity in adolescence and related factors becomes relevant to health promotion. Therefore, with the spread of such practices, it is possible to avoid the appearance of several NCCDs, whose management is costly and often painful for the individual and his family. Based on the foregoing, the present work aims to understand the physical activities of adolescents from public schools in the city of Picos, located in the state of Piauí (PI).

METHOD

This is a descriptive study that is part of a research project entitled "Preventive actions in the control of Diabetes Mellitus Type 2". This also has another sub-project entitled: "Investigation of the risk factors for Type 2 Diabetes Mellitus in adolescents." The project is conducted in two public schools in the city of Picos, Piauí, with support from the National Council for Scientific and Technological Development - CNPq. The studied population is comprised of 145 adolescents aged 12 to 18 years, of both genders, regularly enrolled in those schools.

The subjects were randomly selected by lot from those who agreed to participate in the study and who presented the term of consent properly signed by them and their parents or guardians. We excluded students diagnosed with chronic diseases which impacted directly on their weight and height, and those who, at the time of assessment, presented some difficulty in terms of obtaining anthropometric measures.

Data collection was conducted from August to December 2010. As a data collection instrument we used a form with the following variables: age, gender, income, education, weight, height, BMI, average blood pressure classification after three measurements and capillary blood glucose measurements at random.

Data analysis was made using SPSS software version 17.0, through which were calculated the averages and standard deviations of the variables. To determine associations between variables, we used the $\chi 2$ test. We considered as being statistically significant analyzes with $p < 0.05$.

The study was conducted after the approval of the Ethics Committee in Research of the Federal University of Piauí, according to protocol CAAE 0078.0.045.000-10. We met the requirements of the Guidelines and Standards of Research in Humans in terms of ethical

issues of research involving human beings, presented in Resolution 196/96 of the National Health Council (NHC).

RESULTS

We evaluated 145 adolescents of both genders, of which 62.7% were female. Participants were aged between 12 and 18 years, with an average of 14.8 years. Regarding the family income of these adolescents, the results showed that, in most cases, they live in families receiving up to two minimum wages (84.1%). As for the classification of students in terms of teaching modality, approximately 75.2% of the students attended elementary school.

With regard to the practice of physical activity, we found that 49.7% were classified as physically inactive. It is also noteworthy that among the inactive ones, 86.1% were female (p = 0.000), 58.3% were aged between 12 and 14 years, 8.3% had elevated BMI, 9.7% presented questionable glycemia, and 45.8% had high blood pressure.

Table 1. Distribution of the sample, according to the association of physical activity with socioeconomic and clinical variables. Picos, Piauí, Brazil, 2010

Variables	Practice of Phisical Activity				p
	YES		NO		
	N	%	n	%	
Gender					0,000
Female	29	39,7	62	86,1	
Male	44	60,3	10	13,9	
Age					0,454
12 - 14	47	64,4	42	58,3	
15 - 18	26	35,6	30	41,7	
BMI					0,791
Normal	66	90,4	66	91,7	
High	7	9,6	6	8,3	
Glycemia					
Normal	65	89	65	90,3	0,807
Dubious	8	11	7	9,7	
Blood pressure					0,115
Normal	30	41,1	39	54,2	
High	43	58,9	33	45,8	

(1) χ^2 test

Of the adolescents who reported practicing some kind of activity, the most common exercise was football (54.8%), both among men (34.2%) and among women (20.6%).

Table 2. Physical activities practiced by active adolescents according to gender. Picos, Piauí, Brazil, 2010.

Phisical Activity	*Male*		*Female*		*TOTAL*	
	n	*%*	*n*	*%*	*n*	*%*
Bicycle	6	8,2	2	2,7	8	10,9
Soccer	25	34,2	15	20,6	40	54,8
Hiking	1	1,4	8	11	9	12,4
Bodybuilding	6	8,2	2	2,7	8	10,9
Swimming	1	1,4	-	-	1	1,4
Others	5	6,9	2	2,7	7	9,6
TOTAL	44	60,3	29	39,7	73	100

DISCUSSION

Taking as a reference for classifying as sedentary, adolescents who practiced physical exercises for less than thirty minutes and less frequently than three times a week[6], the study found that 49.7% of the youngsters studied do not engage in physical activity. Other studies have found higher percentages of physical inactivity among adolescents, namely, 67.8%[7] and 64.3%[8].

With regard to the level of physical activity between genders, it was found that 18.5% of boys were inactive, while among girls the percentage was much higher at 68.1%. It is known from many publications that women are less active than men[9.10].

Since early ages it is accepted the idea that men and women have different roles in sociecy, being the men traditionally characterized by the tasks related to work and manual labor, while women are seen connected to family and domestic chores[12]. This difference in the levels of physical activity can be even higher when the instruments used to evaluate the physical activity do not contemplate occupational activities, domestic chores, transportation or family tasks. However, even when objective methods to evaluate physical activity are used, the boys are more physically active than the girls[13].

A study about the barriers in the practices of physical activity among teenagers of both genders pointed that only "not having someone to take me" did not have any difference between the sexes. "Not having the company of friends" and "Being lazy" were the most mention barriers, by the boys (30.4%) and girls (51.8%); however the barrier strongly associated to the highest levels of insufficient physical activity was "Preferring other activities", by the boys (OR = 5.02 (2.69 – 9.37); $p < 0.05$) and girls (OR = 7.10 (3.71 – 13.60); $p < 0.05$)[14].

Besides these evidences, there is scarce information about the most mentioned among Brazilian youngsters. Until the present moment, only one study was found regarding this topic in Brazilian literature[15]. In fact, the majority of the evidences available regarding the prevalence of barriers to physical activity in the Brazilian population are originated in studies performed with adults[16,17].

One important results, from a study performed in the Brazilian state of Pernambuco also identified that women were less active, and that the participation in Physical Education classes during their Middle and High School years is an associated factor for both the current level of physical activity and the habit of watching TV for three or more hours a day (a sedentary behavior trace).

Besides this factor, the results indicate that the place of residency, the work shift, the occupational status and gender discriminate significantly the general health habits [18].

In a research performed in the city of Maceió, with 1,253 students, it was seen a prevalence in sedentary lifestyle in 93.5% of them, most frequent in female teenagers; there was no association between the level of physical activity and the overweight or excessive body fat; soccer and dance were, respectively, the most frequent activities among boys and girls; 60% of the students do not have any Physical Education class[19].

In a study in the Brazilian state of Ceará, with 307 students, has found that more than a half of them, 207 (67.4%), were classified as physically inactive. It also highlights that the percentage of active boys (71%) was 2.45 times higher than the percentage of active girls (29%) ($p=0.000$) and; that around 20% of the teenagers were overweight. Besides that, the cases of overweight were higher among inactive youngsters, as the percentages

of overweight (81%) and obesity (18%) (p=0.001) demonstrate. In arterial pressure, it was identified that 8.7% of the overweight teens and 11.7% of the obese ones were in a limit blood pressure and elevated blood pressure, respectively[7].

In schools of the city of Teresina, 383 students (190 boys and 193 girls) were evaluated. Among the boys, 21.5% had a sedentary lifestyle; 24.2% were insufficiently active; 2.6% were obese and; 8.4% were overweight. Among the girls, 32.1% had a sedentary lifestyle; 9.3% were insufficiently active; 1.5% were obese and; 13.9% were overweight[20].

Thus, it is observed that the physical inactivity can interfere in weight and the pressure levels of the students, predisposing them chronic diseases, which, in the past, were only seen in adults.

CONCLUSION

In the population analyzed, it could be seen that almost half did not practice physical activity. A limitation with regard to this work, and one which has also been reported by other authors, is the lack of a unified instrument for the classification of active and non-active adolescents.

The importance of the school in shaping adolescents' healthy habits is apparent. The school, along with parents, teachers and the leaders of relevant bodies should promote activities that develop students' interest in physical activity, as well as the nurses, as the school is a fertile field for actions of health promotion, which is described in both Strategy in Family Health and the Health in School Program.

It is noteworthy that one of the schools participating in this study was part of the More Education Program, created by the Federal Government in 2007. It aims to increase the educational provision in public schools through optional activities. These were grouped into a number of macro-fields, namely: pedagogical monitoring, environment, sport and leisure, human rights, culture and arts, digital culture, prevention and health promotion, educational communication, scientific education and economic education. A great

proportion of the sample that practiced physical activity was engaged in that program, which shows the importance of its implementation in all schools.

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