ARTIGO ORIGINAL

Barriers related to physical activity practice in adolescents. A focus-group study

Barreiras para a prática de atividade física em adolescentes. Um estudo por grupos focais

Mariana Silva Santos [1,3]
Rogério César Fermino [1,3,4]
Rodrigo Siqueira Reis [1,2,3]
Ana Carina Cassou [3]
Ciro Romélio Rodriguez Añez [2,3]

Abstract – The aim of study was to identify barriers to physical activity in adolescents. Focus group interviews were conducted with subjects aged 15 to 18 years (n=59, 50.8% girls) and divided according to gender. Content analysis was used to classify the reports into specific dimensions. Descriptive statistics employing relative and absolute frequencies of similar reports was performed using the SPSS 11.0 software. The most frequent barriers among adolescents were those associated with "psychological, cognitive and emotional" and "cultural and social" dimensions. For boys, the most frequently reported barriers were "feeling lazy", "lack of company" and "lack of time". For girls, "feeling lazy", "lack of company" and "occupation" were the most common barriers. In conclusion, the perception of barriers by adolescents varies according to gender, a fact requiring specific actions for the promotion of physical activity in this group.

Key words: Determinants; Behavior; Adolescence; Youngsters; Exercise.

1. Universidade Federal do Paraná. Programa de Pós-Graduação em Educação Física. Paraná. Brasil.

2. Pontifícia Universidade Católica do Paraná. Grupo de Pesquisa em Atividade Física e Qualidade de Vida. Curitiba, PR. Brasil

3. Universidade Tecnológica Federal do Paraná. Curitiba, PR. Brasil.

4. Bolsista CAPES.

Recebido em 01/07/09
Revisado em 09/09/09
Aprovado em 17/09/09

Resumo – *O objetivo do estudo foi identificar as barreiras para a prática de atividade física em adolescentes. Foi utilizada a técnica de grupos focais em indivíduos com idades entre 15 e 18 anos (n=59; 50,8% meninas) e constituídos oito grupos homogêneos de acordo com o gênero. A análise de conteúdo foi empregada para agrupar e classificar os relatos e em seguida, aplicou-se a estatística descritiva, utilizando-se a frequência relativa e absoluta dos relatos semelhantes com auxílio do software SPSS 11.0. As barreiras mais frequentes entre os adolescentes foram as que constituem as dimensões "psicológicas, cognitivas e emocionais" e "culturais e sociais". Para os meninos, as barreiras mais relatadas foram a preguiça, a falta de companhia e a falta de tempo. Para as meninas, por sua vez, a preguiça, a falta de companhia e a ocupação foram mais frequentes. Pode-se concluir que os adolescentes percebem barreiras de maneira distinta de acordo com o gênero, o que exige ações específicas para promoção da atividade física neste grupo.*

Palavras-chave: *Determinantes; Comportamento; Adolescência; Jovens; Exercício.*

INTRODUCTION

Physical inactivity is currently one of the most important public health problems and a major risk factor for chronic degenerative diseases[1]. Recent studies demonstrated that levels of physical activity (PA) tend to decline with age, especially during the period of adolescence[2,3]. In Brazil, an estimated 39 to 93.5% of youngsters are physically inactive[4]. In this respect, the participation in regular PA programs during adolescence improves physical and mental health and promotes a healthy lifestyle in adult life[5].

PA is influenced in a positive or negative manner by diverse factors. Factors that exert a negative influence are called barriers. Sallis and Owen[6] classified these determinants into six dimensions (demographic and biological; psychological, cognitive and emotional; cultural and social; environmental; characteristics of PA, and behavioral attributes), a fact demonstrating the complexity and diversity of factors that can influence PA.

Several international studies have been conducted to identify barriers to participate in PA among adolescents[7-15]. These barriers are known to vary according to maturation stage and school grade[7,13]. The main barriers reported are a lack of time, lack of motivation, lack of a partner, presence of disease or injury, and preference for sedentary activities[7,10-12,14]. In Brazil, there is a lack of studies designed to evaluate these barriers. In the only two studies identified in a literature review[16,17], the most frequently cited reasons were the lack of interest in exercise, lack of knowledge about how to exercise, lack of motivation, and obligations with school work.

Knowledge about factors that influence the participation of Brazilian adolescents in PA is still limited not only because of the lack of representative population studies but also because of the lack of instruments that permit the identification of these factors. The two Brazilian studies conducted so far[16,17] have employed instruments developed in other countries, which may not represent local characteristics. One approach to obtain detailed information about these characteristics are focus group interviews[18].

To our knowledge, there are no studies in the literature that used the focus group approach to identify barriers to PA in Brazilian adolescents. The objective of the present study was to perform an exploratory analysis to identify barriers to participate in PA among adolescents.

METHODOLOGICAL PROCEDURES

Participants

Fifty-nine high-school students (30 girls, 50.8%) ranging in age from 15 to 18 years from four high schools in the city of Curitiba, Paraná, Brazil, participated in this study. The schools were selected intentionally based on their location (central and periphery) to account for the different socioeconomic classes and environmental aspects present in the city. The adolescents were previously informed about the study and the participants were selected at the beginning of the physical education class. Using the student list of the teacher, the adolescents were selected by drawing lots until the formation of two groups per school that were homogenous in terms of gender and number of participants. The final sample was obtained after five subjects refused to participate.

The students were informed about the procedures of the study and voluntarily agreed to participate. The parents or legal guardians signed a free informed consent form authorizing the participation of their children. The study was approved by the Ethics Committee of Pontifícia Universidade Católica do Paraná, Brazil (process 1076/2006).

Formation of Focus Groups

The number of participants in each group was determined as recommended by Stewart and Shamdasani[18]. These authors suggest focus groups to be homogenous and to consist of a maximum of 12 participants. Groups with a larger number of members are more difficult for the moderator to control. In the present study, the groups consisted of seven to eight participants. To guarantee the homogeneity of characteristics within groups, the participants were selected according to gender. Eight focus groups were thus formed: four boy's groups (n=7 in three groups and n=8 in one group), and four girls' groups (n=8 and n=7 in two groups each).

Focus Group Interviews

The interviews were conducted according to a protocol previously prepared and tested in a pilot study. The protocol has been described in detail elsewhere[19]. Care was taken in terms of ethical issues, place of application, experience of the moderator, sequence and duration of the interview, and recording of the information. The group interviews were held in pleasant, silent and familiar environments to prevent interference with the discussion.

The groups were coordinated by a single researcher previously trained for this purpose. The

interviews followed a sequence of open-ended questions and topics that covered PA-related individual, social and environmental determinants. The first part consisted of the presentation of the moderator to the group and of the individuals to one another in order to promote integration of the participants and to present the objectives of the study. The second part was characterized by the encouragement of discussion when the students were asked to report what they like to do during the week and on weekends. The moderator tried to refine the answers by asking further questions (What? How? When? Where? Why?, etc.), avoiding to induce expected answers. In the third part, different images depicting active and inactive behaviors were shown to the participants, who would then select the images that correspond to their daily life activities and explain the reasons for their choice. Two themes were covered in a fourth part. The objective of the first one was to determine whether the students performed PA alone or accompanied and the participants were asked to comment on their answers. The second theme referred to the active participation of parents or friends to help the adolescents being physically active. The questions were elaborated in such a way as to avoid embarrassing situations for the participants and the moderator tried to create an environment that favored the participation of all students in the group.

The interviews lasted approximately the time of a physical education class (50 min), thus permitting all topics of the sequence to be covered without dispersal of the participants. The answers and discussions were recorded and audio taped by an assistant who did not interfere with the discussion. A written record of important data and a complete audio tape were thus obtained at the end of each interview. The audio taping was started after authorization had been obtained from the participants and terminated after the discussion was finished and all participants had left the room. The tapes were then transcript verbatim and individually coded (P1, P2, P3, etc.) to prevent identification of the participants.

Data Analysis

The data were analyzed in a qualitative-quantitative manner. For qualitative analysis, the focus group data were submitted to content analysis. Reports containing negative aspects or barriers to PA were identified. These data were classified as determinants and dimensions according to the classification of Sallis and Owen[6]. Figure 1 illustrates an example of the classification of the barriers identified.

For quantitative analysis, descriptive statistics was applied after classification using relative and absolute frequencies of similar reports according to gender. All analyses were performed with the SPSS 11.0 software.

RESULTS

Among the 176 reports identified in the focus groups, those with a frequency of 2 or higher were included. Thus, only 108 reports were analyzed, corresponding to 17 barriers. Twelve barriers (50 reports) were identified in boys, corresponding to 46.3% of the reports. Thirteen barriers (58 reports), corresponding to 53.7% of the reports, were identified in girls. For boys, the most frequent reasons were feeling lazy and lack of a partner (9 reports each, 18%) and lack of time (7 reports, 14%). For girls, the most frequently reported barriers were feeling lazy (14 reports, 24.2%) and lack of a partner and occupation (8 reports each, 13.8%). The other barriers reported and their respective frequencies and dimensions to which they belonged are shown in Table 1. Among the main barriers identified for each gender, eight were found in both genders (Figure 2).

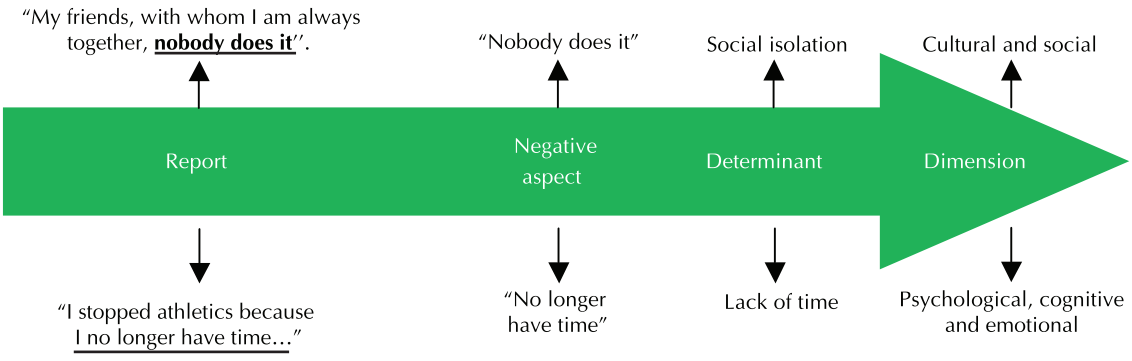

Figure 1. Classification of barriers to participation in physical activity.

Table 1. Absolute and relative frequencies of barriers to physical activity reported according to gender.

Boys (n=29)				Girls (n=30)			
Determinant	Fa	%	Dimension	Determinant	Fa	%	Dimension
Feeling lazy	9	18	Psy, Cog and Emo	Feeling lazy	14	24.2	Psy, Cog and Emo
Lack of a partner	9	18	Cult and Soc	Lack of a partner	8	13.8	Cult and Soc
Lack of time	7	14	Psy, Cog and Emo	Occupation	8	13.8	Demo and Biol
Low self-efficacy	6	12	Psy, Cog and Emo	Lack of time	4	6.9	Psy, Cog and Emo
Occupation	4	8	Demo and Biol	Low self-efficacy	4	6.9	Psy, Cog and Emo
Lack of willpower	3	6	Psy, Cog and Emo	Climatic conditions	3	5.2	Env
Lack of facilities nearby	2	4	Env	Not liking competition	3	5.2	Char PA
Lack of financial incentive	2	4	Psy, Cog and Emo	Closed environment	3	5.2	Env
Friends do not call	2	4	Cult and Soc	Company is a bother	3	5.2	Cult and Soc
Lack of money	2	4	Demo and Biol	Lack of motivation	2	3.4	Psy, Cog and Emo
Dangerous environment	2	4	Env	Lack of willpower	2	3.4	Psy, Cog and Emo
Accessibility	2	4	Env	Lack of money	2	3.4	Demo and Biol
				Dangerous environment	2	3.4	Env
Total	50	100			58	100	

Fa: Absolute frequency; Psi, Cog e Emo: Psychological, Cognitive and Emotional; Cult e Soc: Cultural and Social; Demo e Biol: Demographic and Biologic; Amb: Environmental; Char AF: Physical Activity Characteristics .

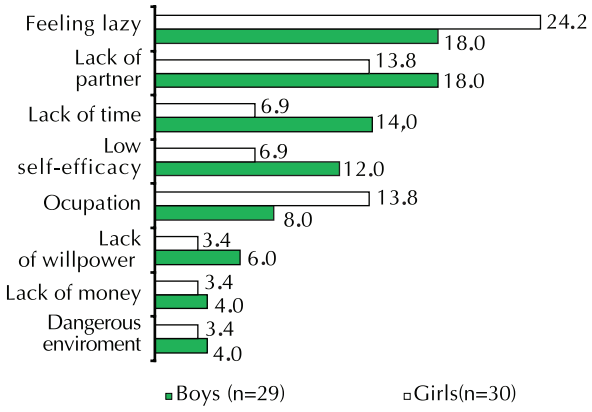

Figure 2. Relative frequency (%) of barriers to physical activity found in both genders.

Figure 3 shows the frequency of barriers to PA grouped according to dimensions. The dimensions "psychological, cognitive and emotional" and "cultural and social" were the dimensions most frequently reported by both genders.

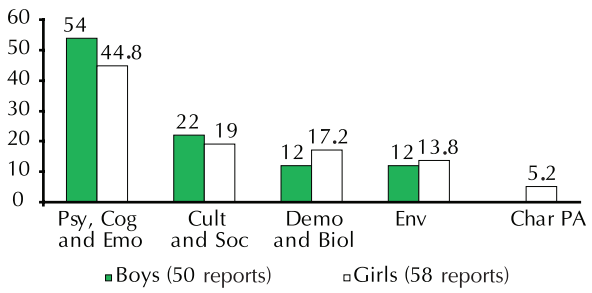

Figure 3. Percentage of reports classified into dimensions according to gender. For abbreviations, see Table 1.

DISCUSSION

The objective of the present exploratory and descriptive study was to identify barriers to PA in adolescents using a focus group approach. This investigation represents an original contribution since similar studies are scarce in the literature. Analysis of the reports showed some differences in the perception of barriers to PA between genders. "Psychological, cognitive and emotional" and "cultural and social" factors were the reasons most frequently reported by both genders. However, girls more frequently reported feeling lazy, whereas for boys the lack of a partner was the most important reason. The relevance of the identification of barriers to PA and their respective dimension resides in the usefulness of this approach to establish distinct intervention strategies for each category[7]. In this respect, the results provided by qualitative studies may contribute to the development of healthy behaviors[12,20].

A decline in PA levels is observed during adolescence[2,3]. One of the possible explanations for this phenomenon is the number of barriers that impair the participation in regular PA programs[10]. The different behavioral, sociocultural and maturity-related changes that occur in early adolescence may explain the reduced participation in PA[7,21]. Barriers are reasons perceived by individuals that may reduce the chance of engagement in these activities[7]. According to Allison et al.[10], these reasons include internal (individual characteristics, priorities, etc.) and external factors (lack of time and lack of support from family or friends).

Several studies conducted on adolescents have shown that boys are more physically active[2,8,9,21-23]. Since PA is a complex behavior that is determined by multiple factors, it is important to differentiate the reasons that lead individuals of either gender to choose a physically active or inactive lifestyle. Not only biological aspects but also differences in upbringing, as well as sociocultural factors, distinguish boys and girls and may explain the differences in the perception of barriers[21,22,24].

Consensus exists that demographic-biological, psychological and sociocultural factors influence population heterogeneity in terms of PA habits among adolescents[24]. Studies employing different methods have shown a wide diversity in barriers to PA. The most cited reasons are the presence of disease or injury, lack of time, lack of motivation, lack of a partner, lack of facilities, environmental characteristics, or simply the preference for sedentary activities and other interests[7,10-14,20]. In Brazil, only two studies have evaluated these barriers[16,17]. Ceschini and Figueira Jr.[16] investigated 1738 adolescents (58.5% girls, 16.1±1 years) of high socioeconomic level and found the lack of interest in exercise and the lack of knowledge about how to exercise to be the most frequent reasons. In the study of Souza[17] involving 2271 students (55% girls, 16.2±1 years) from 29 private schools, lack of willpower and obligations with school work were the most cited barriers. Although a large number of subjects were included in the two studies, a questionnaire with closed questions was used. The differences in barriers between national and international studies might be explained by the physical, social and environmental characteristics of each population, a fact impairing the comparison of results.

In two recent studies, the authors used a focus group approach to determine barriers to participating in PA among Canadian boys[10] and girls[20]. The main reasons reported were the lack of support from friends/family, lack of safety, low priority for PA, lack of time, inaccessibility and cost of facilities, low self-efficacy, priority of school work, and preference for television, computer and internet, video games and talking in chat rooms and on the telephone. In another study using a similar method, Vu et al.[15] observed that the main barrier for girls was the presence of boys since boys are unfair during games and hinder girls' activities.

Psychological, cognitive and emotional barriers

"Psychological, cognitive and emotional" factors that were the first dimension most frequently reported by both genders are the most common causes of inactive behavior. The characteristics of this dimension refer to values, intentions, emotions, perceptions and attitudes that help explain the reasons why some individuals are physically active[6]. In the present study, the most frequent barriers of this dimension were feeling lazy, lack of time and low self-efficacy.

Girls frequently reported the reason "feeling lazy", a finding that might be explained by the fact that they choose passive leisure activities due to sociocultural factors[21,24]. Since young ages, girls are directed towards taking care of the family, whereas boys are instructed to perform more vigorous labor activities[24]. For boys, lack of time was also a relevant reason, a finding attributable in part to greater responsibility and longer study times[21]. At this age, adolescents are in an academic stage characterized by the intensive preparation for the selective process to enter the university[17]. According to Dwyer et al.[20], work outside home, involvement in technology-related activities and school work also explain the frequent mentioning of this reason. In the present study, occupation was relevant, especially for girls. Although not a part of "psychological, cognitive and emotional" determinants but rather considered a "demographic and biological" factor in girls, this barrier might be associated with the need to dedicate more time to domestic tasks and school work. Similar results have been reported for Brazilian adolescents[21]. In Brazil, women spend almost three times more time on domestic tasks than men (27.2 versus 10.7 h/week)[25]. This accumulation of tasks may reduce the availability of time and motivation for other activities. These sociocultural factors imply behavioral changes that interfere with the decision to participate in PA and to develop other healthy habits[21]. According to Tergerson and King[11], a coherent solution for the lack of time is the effective engagement of adolescents in physical education classes because it does not require additional time outside school hours.

Low self-efficacy has been frequently reported in studies on adolescents[8-10]. Self-efficacy has been described in the literature as a factor that influences the power to determine the degree of persistence of a behavior against difficulties and the success of performance, reflecting not only on past PA but also influencing future activity[26]. The perception of low self-efficacy causes adolescents to refrain from certain activities since they do not believe in their competence or capacity to perform a task.

Kohl lll and Hobbs[27] suggested that self-efficacy is not simply a factor related to PA but a predictor of physically active behavior. In reviews on PA, self-efficacy was associated with physically active behavior in adolescents[8,9].

Cultural and social barriers

"Social and cultural" factors that were the second most frequent dimension reported by both genders mainly refer to social isolation (lack of a partner) and lack of social support from friends and family[6]. The lack of a partner was reported by both adolescent boys and girls as the main reason for not participating in PA. Despite methodological differences, Gonçalves et al.[21] observed an association between the possibility of meeting friends and physical inactivity. The authors found an inverse relationship between the prevalence of physical activity and the number of days per week when adolescents were meeting friends[21]. There are other factors that might explain the relationship between lack of a partner and PA. Hallal et al.[23] observed a positive association between physical inactivity and time spent per day watching television in Brazilian adolescents. One hypothesis is that sedentary activities can be performed individually and adolescents without a partner for PA engage in passive leisure activities. However, further studies are necessary to confirm this hypothesis. Evidence indicates that physically active adolescents have equally active friends[24]. Other investigators found a strong association between PA and social support from family, friends and other people important to youngsters[6,8]. The strength of this association contributes to the fact that social support is frequently reported in the literature as an effective intervention strategy to promote an active lifestyle[26]. These results agree with the study of Van de Horst et al.[9], in which social support from family and friends was associated with PA.

One limitation of the present study was the small number of participants. The sample consisted of 59 adolescents and was therefore not representative of the population. The objective of the method used was to understand the opinion of the subjects. A larger number of subjects and groups could not be included since the interviews and audio tape transcriptions are time consuming. Despite this methodological characteristic, the focus group approach permits the true identification of information by enabling discussions between participants which, in turn, encourage the perception of diverse behavioral characteristics that are not identified when questionnaires are used. Although the aim of this study was to identify barriers to PA in adolescents, some care should be taken when extrapolating the results found. The south region of Brazil is characterized by elevated social indices and in view of the country's vast territory other regions may not present the same characteristics. The results of the present study may contribute to the elaboration of more objective instruments such as questionnaires and scales for the evaluation of barriers to PA among adolescents in similar contexts. Further studies including different samples are necessary to evaluate the consistency of the results in other communities.

CONCLUSION

Adolescent boys and girls perceive barriers to PA in a distinct manner, with "psychological, cognitive and emotional" and "cultural and social" factors being the most relevant. For boys, the most frequently reported barriers were feeling lazy, lack of a partner and lack of time. For girls, the most important barriers were feeling lazy, lack of a partner and occupation. The results suggest that the barriers identified might be overcome by intervention programs, which would not be possible in the case of environmental barriers. The identification of barriers to and determinant factors of PA is an important strategy to obtain useful information for the development of intervention programs and health promotion.

REFERENCES

1. World Health Organization. World Health Report 2002. Reducing risks, promoting healthy life. Geneva: WHO, 2002; Available at: <http://www.who.int/whr/2002/en/> [May 20, 2008].
2. Caspersen CJ, Pereira MA, Curran KM. Changes in physical activity patterns in the United States, by sex and cross-sectional age. Med Sci Sports Exerc 2000;32(9):1601-1609.
3. Allison KR, Adlaf EM, Dwyer JJM, Lysy DC, Irving HM. The decline in physical activity among adolescent students. A cross-national comparison. Can J Public Health 2007;98(2):97-100.
4. Tassitano RM, Bezerra J, Tenório MCM, Colares V, Barros MVG, Hallal PC. Atividade física em adolescentes brasileiros: uma revisão sistemática. Rev Bras Cineantropom. Desempenho Hum 2007;9(1):55-60.
5. Hallal PC, Victora CG, Azevedo MR, Wells JC. Adolescent physical activity and health: a systematic review. Sports Med 2006;36(12):1019-1030.
6. Sallis JF, Owen N. Physical Activity & Behavioral Medicine. California: SAGE Publications. Behavioral Medicine and Health Psychology Series. 1999.

7. Sherar LB, Gyurcsik NC, Humbert ML, Dyck RF, Fowler-Kerry S, Baxter-Jones ADG. Activity and barriers in girls (8–16 yr) based on grade and maturity status. Med Sci Sports Exerc 2009;41(1):87-95.
8. Sallis JF, Prochaska JJ, Taylor WC. A review of correlates of physical activity of children and adolescents. Med Sci Sports Exerc 2000;32(5):963-975.
9. Van Der Horst K, Paw MJ, Twisk JW, Van Mechelen W. A brief review on correlates of physical activity and sedentariness in youth. Med Sci Sports Exerc 2007;39(8):1241-1250.
10. Allison KR, Dwyer JJ, Goldenberg E, Fein A, Yoshida KK, Boutilier M. Male adolescents' reasons for participating in physical activity, barriers to participation, and suggestions for increasing participation. Adolescence 2005;40(157):155-170.
11. Tergerson JL, King KA. Do perceived cues, benefits, and barriers to physical activity differ between male and female adolescents. J School Health 2002;79(9):374- 380.
12. Gordon-Larsen P, Griffiths P, Bentley ME, Ward DS, Kelsey K, Shields K, et al. Barriers to physical activity qualitative data on caregiver–daughter perceptions and practices. Am J Prev Med 2004;27(3):218-223.
13. Gyurcsik NC, Spink KS, Bray SR, Chad K, Kwan M. An ecologically based examination of barriers to physical activity in students from grade seven through first-year university. J Adolesc Health 2006;38(704-11).
14. Kimm SY, Glynn NW, McMahon RP, Voorhees CC, Striegel-Moore RH, Daniels SR. Self-perceived barriers to activity participation among sedentary adolescent girls. Med Sci Sports Exerc 2006;38(3):534-540.
15. Vu MB, Murrie D, Gonzalez V, Jobe JB. Listening to girls and boys talk about girls' physical activity behaviors. Health Educ Behav 2006;33(1):81-96.
16. Ceschini FL, Figueira Jr. A. Barreiras e determinantes para a prática de atividade física em adolescentes. R bras Ci e Mov 2007;15(1):29-36.
17. Souza GS. Determinantes da atividade física e estágios de mudança de comportamento em adolescentes [Dissertação de Mestrado - Programa de Pós-Graduação em Educação Física]. Florianópolis: Centro de Desportos, Universidade Federal de Santa Catarina; 2003.
18. Stewart DW, Shamdasani PN. Focus groups: Theory and practice. California: Sage: Newbury Park; 1990.
19. Santos MS, Fermino RC, Reis RS, Rodriguez Añez CR. Desenvolvimento de um instrumento para avaliar barreiras para a atividade física em adolescentes. Rev Bras Atividade Física e Saúde 2009;14(2):76-85.
20. Dwyer JJ, Allison KR, Goldenberg ER, Fein AJ, Yoshida KK, Boutilier MA. Adolescent girls' perceived barriers to participation in physical activity. Adolescence 2006;41(161):75-89.
21. Gonçalves H, Hallal PC, Amorim TC, Araújo CLP, Menezes AMB. Sociocultural factors and physical activity level in early adolescence. Rev Panam Salud Publica 2007;22(4):246-253.
22. Teixeira e Seabra AF, Maia JA, Mendonca DM, Thomis M, Caspersen CJ, Fulton JE. Age and sex differences in physical activity of Portuguese adolescents. Med Sci Sports Exerc 2008;40(1):65-70.
23. Hallal PC, Bertoldi AD, Gonçalves H, Victora CG. Prevalência de sedentarismo e fatores associados em adolescentes de 10-12 anos de idade. Cad Saúde Pública 2006; 22(6):1277-1287.
24. Seabra A, Mendonça DM, Thomis MA, Anjos LA, Maia JAR. Determinantes biológicos e sócio-culturais associados à prática de atividade física de adolescentes. Cad Saúde Pública 2008;24(4):721-736.
25. Pinheiro L, Fontoura NO, Querino AC, Bonetti A, Rosa W. Retrato das desigualdades de gênero e raça; Available at: <http://www.ipea.gov.br/default.jsp> [2008 Dec 28].
26. Mota J, Sallis JF. Actividade Física e Saúde: factores de influência da atividade física nas crianças e nos adolescentes: Ed Campo das letras; 2002.
27. Kohl lll HW, Hobbs KE. Development of physical activity behaviors among children and adolescents. Pediatrics 1998;101(3 Pt 2):549-554.

Endereço para correspondência
Mariana Silva Santos
Pontifícia Universidade Católica do Paraná – PUCPR
Centro de Ciências Biológicas e da Saúde, CCBS – Curso de Educação Física
Grupo de Pesquisa em Atividade Física e Qualidade de Vida – GPAQ
Rua Imaculada Conceição, 1155 – Prado Velho – CEP 80215-901
Curitiba – Paraná – Brasil
E-mail: marianass@pop.com.br