RESEARCH

PHYSICAL ACTIVITY LEVELS AND FACTORS ASSOCIATED WITH THE SEDENTARY LIFESTYLE OF USERS OF A BASIC HEALTH UNIT IN BELO HORIZONTE, MINAS GERAIS

NÍVEL DE ATIVIDADE FÍSICA E FATORES ASSOCIADOS AO SEDENTARISMO EM USUÁRIOS DE UMA UNIDADE BÁSICA DE SAÚDE EM BELO HORIZONTE, MINAS GERAIS

NIVEL DE ACTIVIDAD FÍSICA Y FACTORES RELACIONADOS CON LOS USUARIOS DE UN ESTILO DE VIDA SEDENTARIO DE UNA UNIDAD BÁSICA DE SALUD DE BELO HORIZONTE, MINAS GERAIS

Juciany Rodrigues de Oliveira Ramalho [1]
Aline Cristine Souza Lopes [2]
Mariana Tâmara Teixeira de Toledo [3]
Sérgio Viana Peixoto [4]

[1] Physical Therapist. M.S. in Health Sciences, Graduate program in Health Sciences. René Rachou Research Center, Oswaldo Cruz Foundation. Public Health and Aging Research Group. Oswaldo Cruz Foundation, Federal University of Minas Gerais (UFMG). Belo Horizonte, MG – Brazil.
[2] Adjunct Professor, Graduate Program and Department of Maternal and Child Health Nursing and Public Health / Graduate program, UFMG Nursing School. Research Group on Nutrition Intervention. Belo Horizonte, MG – Brazil.
[3] Nutritionist. M.S. in Nursing. Research Group on Nutrition Intervention, UFMG Nursing School. Belo Horizonte, MG – Brazil.
[4] Adjunct Professor, UFMG Nursing School, René Rachou Research Center, Oswaldo Cruz Foundation. Belo Horizonte, MG – Brazil.

Corresponding Author: Juciany Rodrigues de Oliveira Ramalho. E-mail: jucianyr@cpqrr.fiocruz.br
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ABSTRACT

This study aimed to estimate energy expenditure due to physical activity and to determine the prevalence of sedentary lifestyles and the factors associated with this condition in adult (≥ 20 years of age) users of a Basic Health Unit (BHU). This cross-sectional study included 415 users of a BHU in Belo Horizonte, MG, Brazil, located in the coverage area of the Academia da Cidade (City Gym) program, a health promotion service of primary healthcare. Physical activity was evaluated using the IPAQ-short version questionnaire, which showed a prevalence of sedentary lifestyles (<450 MET-min/week) of 31.2% and a median energy expenditure of 831.0 MET-min/week (591.0 among men and 865.5 among women). The results of a multivariate analysis, based on Poisson regression, showed that sedentary lifestyles were positively associated with age and negatively associated with prior knowledge of the Academia da Cidade in the region. It is important to note that the present study's results may favor the planning of actions geared toward promoting more appropriate healthy lifestyles, as well as toward providing subsidies to improve the impact of health promotion programs, such as the Academia da Cidade program, which has recently been implemented throughout Brazil.

Keywords: Motor Activity; Health Centers; Sedentary Lifestyle; Health Promotion.

RESUMO

Os objetivos deste trabalho foram estimar o gasto energético com atividades físicas e determinar a prevalência de sedentarismo e os fatores associados a essa condição entre adultos (≥ 20 anos) frequentadores de unidade básica de saúde (UBS). Participaram do estudo transversal 415 usuários de uma UBS de Belo Horizonte-MG situada na área de abrangência do Programa Academia da Cidade, serviço de promoção da saúde da atenção primária à saúde. A atividade física foi avaliada pelo questionário IPAQ – versão curta, sendo a prevalência do sedentarismo (<450 MET-min/semana) de 33,7% e a mediana do gasto energético de 831,0 MET-min/semana (591,0 entre homens e 865,5 entre mulheres). Os resultados da análise multivariada, baseada na regressão de Poisson, mostraram que o sedentarismo foi positivamente associado à idade e negativamente associado ao conhecimento sobre a existência da Academia da Cidade no território. Ressalta-se que os resultados obtidos podem favorecer o planejamento de ações de promoção de modos saudáveis de vida mais adequados à realidade, bem como fornecer subsídios sobre o impacto dos programas de promoção da saúde, como a Academia da Cidade, recentemente implantados em todo o Brasil.

Palavras-chave: *Atividade Motora; Centros de Saúde; Estilo de Vida Sedentário; Promoção da Saúde.*

RESUMEN

Los objetivos de este estudio fueron estimar el gasto energético con actividad física y determinar la prevalencia de sedentarismo y factores asociados con esta enfermedad entre adultos (≥ 20 años) pacientes de una Unidad Básica de Salud (UBS). Se trata de un estudio transversal en el que participaron 415 usuarios de una UBS de Belo Horizonte (MG), ubicada en la zona de cobertura del programa Academia da Cidade, servicio sanitario que fomenta la atención primaria de la salud. La actividad física fue evaluada por el cuestionario IPAQ – versión corta, el cual indicó prevalencia de sedentarismo (<450 MET-min/semana) del 33,7% y promedio de gasto energético 831,0 MET-min/semana (591,0 para los hombres y 865,5 para las mujeres). Los resultados del análisis multivariante, basado en la regresión de Poisson, demostraron que la inactividad se asoció positivamente con la edad y negativamente con el conocimiento de la existencia del programa Academia da Cidade en la zona. Se destaca que los resultados podrían favorecer la planificación de medidas de promoción de estilos de vida

saludables más adecuados a la realidad, así como proporcionar información sobre el impacto de programas de promoción de la salud, tales como Academia da Cidade, recién puesto en práctica en Brasil.

***Palabras clave**: Actividad Motora; Centros de Salud; Estilo de Vida Sedentário; Promoción de la Salud.*

INTRODUCTION

Physical activity is associated with a reduction in the mortality and morbidity caused by a wide range of diseases, especially cardiovascular illnesses, leading to an increase in the population's life expectancy. Therefore, the adoption of programs that increase the levels of physical activity can enhance the quality of life of individuals and reduce expenses with medical care.[1-8]

The understanding of the prevalence and factors associated with a sedentary lifestyle is important in characterizing a given population, in turn allowing for an appropriate planning and assessment of the control measures, aimed at increasing the practice of physical activity. Many prior studies have demonstrated that physical activity tends to diminish with age, in addition to being lesser among women and within a low-income population.[9,10]

The data analysis from the Brazilian National Household Sample Survey (PNAD), from 2008, shows that 20.2% of the population of 14 years of age or older reported not practicing any type of physical activity, with the larger proportion of sedentary people found in the Southeastern regions of Brazil, and a slightly smaller proportion in the South of Brazil (22.1% and 17.4%, respectively).[11] By contrast, studies carried out on selected populations show even more disturbing results. Among the users of the Family Health Program in the town of Francisco Morato, São Paulo, who had been diagnosed with diabetes mellitus and/or hypertension, 75% reported not having the habit of practicing any kind of physical activity.[12] In a household survey carried out on an adult and elderly population sample living in the coverage areas of the Basic Health Units (BHUs) of 41 municipalities located in the Southern and Northern regions of Brazil, a high prevalence of sedentary lifestyles was found (31.8% among adults and 58.0% among the elderly).The authors called attention to the fact that the BHUs were not attending to user needs regarding the practice of physical activity as an instrument to promote health.[13]

It is important to note that this type of constructed environment has a strong influence on the level of physical activity of a given population, in such a way that efforts to modify this environment, aimed at encouraging physical exercise, must be considered a public health issue.[14] In this sense, programs, such as *Academias da Cidade* (City Gyms), which already existed in the capitals of Recife, Belo Horizonte, and Aracaju, gave rise to the creation of a national program entitled *Academia da Saúde* (Health Gym), implemented in Brazil in 2011. These *Academias da Saúde* seek to encourage physical activities in 4,000 Brazilian cities by 2015 and consist of spaces with an adequate infrastructure and specialized staff to provide medical advice to the general population.[15,16] It has therefore become necessary to assess the level of physical activity of the population who receives this type of healthcare service, especially in regions where programs to promote physical activities, such as the *Academia da Cidade*, have already been implemented, in such a way as to back the proposal and implementation of healthcare actions geared toward encouraging the practice of physical activity.

Therefore, the present study aims to estimate the energy expended on physical activities and determine the prevalence of sedentary lifestyles and the factors associated with this condition among the users of BHUs in Belo Horizonte, MG, Brazil, where the *Academia da Cidade* program, a proposal similar to that adopted by the Brazilian Health Ministry, was implemented in 2006.

METHODOLOGY

This work is a cross-sectional study and includes both adult (20 to 59 years of age) and elderly (60 years of age or older) individuals who received medical services at a BHU located on the east side of the city of Belo Horizonte, MG, Brazil, in a region with a high social vulnerability index (SVI=0.77). The SVI is established for each city's urban planning department according to environmental, cultural, economic, and legal variables related to security, including food and nutrition. The SVI values vary from zero to one, considering that, as the SVI value rises, the situation of the population worsens and thus becomes more vulnerable.[17]

The BHU is replete with five family health teams and two oral healthcare teams, in addition to pediatric, gynecological, and nutritional care. The capacity of the BHUs' facilities is designed to attend to approximately 20,000 individuals. It also includes the Family Heath Support Center (FHC), comprised of a social worker, a physical education specialist, a pharmacist, a physical therapy professional, a phonologist, a nutritionist, and a psychologist, all of whom work together with the family healthcare teams in the BHUs' coverage areas.

This region includes a City Gym and the health promotion services provided by the Brazilian Unified Healthcare System (SUS). In the City Gym, health intervention has been ongoing since 2006 and is aimed at promoting health as well as the prevention and control of chronic non-communicable diseases (CNCD) through the regular practice of physical exercis-

es and nutritional follow-up, on account of the high prevalence of CNCD observed in clinical practices, such as hypertension (49.5%), diabetes *mellitus* (36.0%), and dyslipidemias (15.7%).[18]

All individuals of 20 years of age or older who sought out medical services at a BHU between October 2009 and February 2010 were invited to participate in this study, with a refusal rate of less than 5%. Of the 432 interviews, there was a loss of 3.94% (17), due to incomplete data in the questionnaire (13), as well as to interviews with individuals of less than 20 years of age (02) and interviews with pregnant women (02). Thus, 415 interviewed users of BHUs were included in this analysis.

The data were collected using a questionnaire and an anthropometric assessment carried out by students from the Nursing, Physical Therapy, Phonology, Medicine, Nutrition, Dentistry, and Occupational Therapy courses from the Federal University of Minas Gerais (UFMG). The students received training on how to properly apply the questionnaire and assess the anthropometric measures carried out on the UFMG campus. After, these students underwent field training for two consecutive weeks with a trained professional. The entire data collection process was supervised by highly qualified healthcare professionals.

The questionnaire treated the following information: sociodemographic characteristics (age, sex, education level (complete years), and income); the use of healthcare services (number of doctor's appointments and hospitalization within the last 12 months); self-reported morbidity (diabetes, hypertension, heart disease, and renal insufficiency) and self-rated health; lifestyle (smoking and alcohol consumption); prior knowledge of the *Academia da Cidade*; and the International Physical Activity Questionnaire (IPAQ) – short version, used to assess one's level of physical activity.[19]

To classify the participant of the study as either sedentary or physically active, a score, in MET-min/week, was created, which represents the energy spent during physical activities. The score was defined by multiplying the intensity of the activity (in MET), defined by the IPAQ, by the time of the activity itself (in minutes) and by the weekly frequency of this activity. The individuals who spent <450 MET-min/week were classified as sedentary, which is in accordance with that established by the US Department of Health and Human Services.[20]

The anthropometric assessment included the measurement of one's weight, height, waist circumference (WC), and hip circumference (HC), according to that set forth by the World Health Organization (WHO).

The body mass index (BMI), which was classified according to each age range, was calculated by measuring one's weight and height. WHO recommendations were used for adults[21], whereas Nutrition Screening Initiative recommendations were used for the elderly patients.[22] The *overweight* variable was defined by analyzing the collected data, using the following BMI values: adults (BMI≥25.0 kg/m²) and the elderly (BMI≥27.0 kg/m²). To present these data, the adult and the elderly participants were classified in the categories of underweight, eutrophic, and overweight.

To measure the WC, a flexible, but non-stretchable tape measure was placed at the median point between the iliac crest and the lowest rib, without compromising the tissue. For the HC, the tape measure was placed on the maximal circumference over the buttocks. The waist-to-hip ratio (WHR) was calculated by dividing the WC (in cm) by the HC (in cm), with the WC and the WHR classified according to WHO recommendations.[23]

A descriptive analysis of the collected variables was performed for the entire studied population as well as among sedentary and non-sedentary individuals. The variables were presented as number and proportion, average and standard deviation or median, and maximum and minimum values. For the univariate analysis, the Pearson chi-square test was used to evaluate the difference among the proportions, the Student's t test was used to compare the averages, and the Mann Whitney test was used to compare the medians of energy expenditure.

A multivariate analysis was carried out to evaluate the association of the exploratory variables with a sedentary lifestyle by calculating the prevalence ratios (PR) and respective 95% confidence intervals (CI), using the robust Poisson regression model. The variables that presented an association in significance level of less than 20% were introduced into the multivariate analysis, given that those with a significant association were maintained in the final model, considering a significance level of 5%, in addition to age and gender.

The Stata 10.0 program (*Stata Corp. College Station*, USA) was used to perform the analyses.

This study was approved by the Research Ethics Committees from the city hall of Belo Horizonte (protocol number – CAAE 0037.0.410.000-09) and from UFMG (protocol number – ETIC 037.0.410.203-09). Free informed consent was obtained from all participants of this study.

RESULTS

This study interviewed 415 users of primary healthcare services, made up of 328 women and 87 men. The prevalence of a sedentary lifestyle was of 33.7%, with the majority of cases found among men (43.7%), as compared to women (31.1%) (p=0.027). The energy expenditure, estimated by the IPAQ, presented a median of 831.0 MET-min/week (25th percentile – 264.0; 75th percentile = 2010.0 MET-min/week), with a 591.0 MET-min/week (P25 = 99.0; P75 = 2274.0 MET-min/week) among men and a 865.5 MET-min/week (P25 = 346.5; P75 = 1939.0 MET-min/week) among women (p = 0.067).

Table 1 describes the characteristics of the participants, according to a sedentary lifestyle. The users were an average of

41.2 years of age (standard-deviation = 14.9 years), with 79.0% women, 35.7% with an 11th grade or higher education level, 21.9% smokers, 23.7% having reported daily or weekly alcohol consumption, and 46.8% having reported prior knowledge of the *Academia da Cidade*. A sedentary lifestyle was significantly more common among the elderly participants (p=0.011), among men (p = 0.027), and among those who had never heard of the *Academia da Cidade* (p=0.017).

Table 1 - Sociodemographic characteristics, lifestyle, and knowledge of the City Gym, according to a sedentary lifestyle: Basic Health Unit from the east side of Belo Horizonte, Minas Gerais, Brazil, 2009 and 2010

Variables	Total	Sedentary Lifestyle		p-value*
		Yes	No	
Age in years,				
Average (standard-deviation)	41.2 (14.9)	43.6 (15.3)	40.0 (14.6)	0.011
Gender, N (%)				
Male	87 (21,0)	38 (27,1)	49 (17,8)	0,027
Female	328 (79,0)	102 (72,9)	226 (82,2)	
Education level (complete years), N (%)				
0-3	45 (10,8)	19 (13,6)	26 (9,5)	0,272
4-10	222 (53,5)	77 (55,0)	145 (52,7)	
≥ 11	148 (35,7)	44 (31,4)	104 (37,8)	
Monthly income per capita in thirds, N (%)				
First (R$ 7.00 – R$ 190.00)	129 (33,4)	41 (32,3)	88 (34,0)	0,803
Second (R$ 190.10 – R$ 333.30)	131 (33,9)	46 (36,2)	85 (32,8)	
Third (R$ 333.40 – R$ 1,265.00)	126 (32,6)	40 (31,5)	86 (33,2)	
Current smoker, N (%)				
Yes	91 (21,9)	28 (20,0)	63 (22,9)	0,498
No	324 (78,1)	112 (80,0)	212 (77,1)	
Frequency of alcohol consumption, N (%)				
Daily or weekly	98 (23,7)	32 (23,0)	66 (24,0)	0,825
< weekly	316 (76,3)	107 (77,0)	209 (76,0)	
Knowledge of the Academia da Cidade, N (%)				
Yes	194 (46,8)	54 (38,6)	140 (50,9)	0,017
No	221 (53,2)	86 (61,4)	135 (49,1)	

*p-value: Student's t test used to determine differences among averages and Pearson Chi-square test used to determine differences among proportions.

Table 2 presents the distribution of reported morbidity, use of healthcare services, and anthropometric variables. Among the interviewed individuals, 34.2% reported a medical diagnosis of hypertension, 10.3% of diabetes mellitus, 8.7% of heart disease, and 4.0% of renal insufficiency. Self-rated health was classified as good or very good by 61.2% of the participants, 38.3% reported 4 or more doctor's appointments within the last year, and 13.5% had been hospitalized one or more times within the same period. The assessment of the participant's nutritional state showed a high prevalence of overweight individuals (58.9%). The WHR was the only variable that presented a significant difference among the studied groups, presenting a higher value among sedentary individuals (p = 0,005).

Table 2 - Reported morbidity, use of healthcare services, and anthropometric variables, according to a sedentary lifestyle: Basic Health Unit from the east side of Belo Horizonte, Minas Gerais, Brazil, 2009 and 2010

Variables	Total	Sedentary Lifestyle		p-value*
		Yes	No	
Hypertension, N (%)				
Yes	139 (34,2)	53 (39,0)	86 (31,9)	0,154
No	267 (65,8)	83 (61,0)	184 (68,1)	
Diabetes mellitus, N (%)				
Yes	42 (10,3)	13 (9,5)	29 (10,7)	0,704
No	366 (89,7)	124 (90,5)	242 (89,3)	
Diagnosis of heart disease, N (%)				
Yes	35 (8,7)	9 (6,8)	26 (9,7)	0,342
No	366 (91,3)	123 (93,2)	243 (90,3)	
Renal insufficiency, N (%)				
Yes	16 (4,0)	6 (4,4)	10 (3,8)	0,763
No	381 (96,0)	129 (95,6)	252 (96,2)	
Self-rated health, N (%)				
Good / Very good	254 (61,2)	85 (60,7)	169 (61,5)	0,884
Fair / Bad	161 (38,8)	55 (39,3)	106 (38,5)	
Number of doctor's appointments in the last 12 months, N (%)				
0	45 (10,9)	18 (12,9)	27 (9,9)	0,222
1-3	210 (50,8)	63 (45,0)	147 (53,8)	
≥ 4	158 (38,3)	59 (42,1)	99 (36,3)	
Hospitalizations in the last 12 months, N (%)				
None	359 (86,5)	121 (86,4)	238 (86,5)	0,974
One or more	56 (13,5)	19 (13,6)	37 (13,5)	
Body mass index (kg/m²),				
Average (SD)	27,5 (6,0)	27,6 (6,4)	27,4 (5,9)	0,812
Overweight according to BMI				
No	167 (41,3)	66 (44,9)	101 (39,3)	0,272
Yes	237 (58,7)	81 (55,1)	156 (60,7)	
Waist circumference (cm),				
Average (SD)	85,4 (14,2)	86,8 (15,0)	84,8 (13,8)	0,087
Waist-to-Hip Ratio				
Average (SD)	0,82 (0,08)	0,84 (0,08)	0,81 (0,08)	0,005

*p-value: Student's t test used to determine differences among averages and Pearson Chi-square test used to determine differences among proportions.
BMI: Body Mass Index.

Table 3 shows the final model for the factors associated with a sedentary lifestyle. The variables of age, gender, prior knowledge of the *Academia da Cidade*, reports of hypertension, and the WHR, which showed a p<0.20 in the previous analysis, were introduced into the initial model. The variables that continued to be associated with the studied event were age (PR=1.01; 95% CI=1.00-1.02) and prior knowledge of the *Academia da Cidade* (PR=0.74; 95% CI=0.56-0.99).

Table 3 - Final model for the association among exploratory variables and a sedentary lifestyle: Basic Health Unit from the east side of Belo Horizonte, Minas Gerais, Brazil, 2009 and 2010

Variables	Prevalence Ratio (95% CI)*	p-value
Age		
In years	1,01 (1,00 – 1,02)	0,013
Gender		
Female	1,00	0,083
Male	1,30 (0,97 – 1,75)	
Knowledge of the City Gym		
No	1,00	0,043
Yes	0,74 (0,56 – 0,99)	

* Poisson Regression: prevalence ratios adjusted by the variable listed in the table.

DISCUSSION

The results of the present work showed a high prevalence of sedentary lifestyle among the users of the BHUs analyzed in this study (33.7%) and a classic association with the individual's age, in addition to illustrating that prior knowledge of the *Academia da Cidade* may well have influenced the practice of physical activity within this population.

The estimate of energy expenditure among adults in prior literature is quite varied, such as results from European Union member states, which showed median estimates that varied between 480.0 and 5901.0 MET-min/week.[24] Jurakic et al.[25] evaluated individuals who reside in Croatia and found a higher estimate of energy expenditure (median = 58.2 MET-hour/week, which is equivalent to 3492.0 MET-min/week) than that observed in the present study. By contrast, another study developed among adults who live in Australia (median = 984.0 MET-min/week; P25 = 492.0; P75 = 1866.0)[26] showed a similar energy expenditure median.

Many population-based studies conducted among Brazilian adults have demonstrated that there is a large variation in the prevalence of sedentary lifestyles, even if the same instrument (IPAQ) is used to assess the level of physical activity. In one study conducted in the town of Lages, Santa Catarina, within a population of 20 to 59 years of age, the prevalence of the lack of physical exercise reached 29.6% in 2007[27], while in the same year, in Pelotas, Rio Grande do Sul, 52.0% of the adults were classified as sedentary.[28] Considering the users of one BHU in the town of Ananindeua, Pará, 65.5% of the interviewed individuals did not practice regular physical activity,[29] which proved to be higher than that found in the present study. By contrast, Siqueira et al.[13] researched the resident population in the coverage areas of BHUs in different Brazilian states and found a prevalence of sedentary lifestyles to be 31.8% among adults, which is similar to that reported in the present work (33.7%).

It should be noted that the difference in the prevalence of the lack of physical activity observed within the wide range of studies from prior literature may well be attributed to the different instruments adopted, to the cutoff points used, or to the characteristics of the participants themselves. However, the results, in general, demonstrate the low level of physical activity within the Brazilian population, highlighting the urgent need for policies that stimulate more healthy lifestyles and a diminishing of the sedentary lifestyle, especially when inserted into the context of health promotion actions, as proposed by the *Academia da Saúde* program.

The positive association between a sedentary lifestyle and age is consistent with the resents presented in prior literature,[11,28,30,31] illustrating a direct proportion between the decline in physical activity and the increase in age, which must be considered when drafting policies to encourage this practice, especially in the elderly population. The findings from the present study offer important input, as they show that this association can also be seen in healthcare service users in a manner that is similar to that observed among the adults and the elderly who reside in the coverage areas of BHUs from a sample of municipalities in the Southern and Northeastern regions of Brazil.[13]

The non-association between a sedentary lifestyle and the gender of the participants in the final model may well be attributed to the inclusion of the prior knowledge of the *Academia da Cidade* variable, given that these variables presented a significant association, with 52.0% of the women reporting prior knowledge of the Gym, whereas this percentage was only 26.1% among men (p<0.001). The PR for sedentary lifestyles among men, adjusted only by age, was 1.40 (95% CI=1.00-1.02; p=0.019), demonstrating that men presented a significant increase of 40% in the prevalence of a sedentary lifestyle when compared to women (data not shown).

Considering the lack of physical activity in all domains, some studies have reported a greater prevalence of sedentary lifestyles among men,[11,13,27] while others have found no association among these variable[28,31]. Nevertheless, in general, the studies indicate that the male population presents a higher level of physical activity during leisure activities,[11,32] while women tend to be more active when performing domestic activities.[28] Therefore, understanding the profile of the population's physical ac-

tivity in different domains can lead to a greater comprehension of the association between gender and a sedentary lifestyle.

The fact that the individual had prior knowledge of the *Academia da Cidade* proved to be negatively associated with a sedentary lifestyle, indicating the positive influence of this health promotion service for the increase in levels of physical activity within the population that uses primary health services. This result runs in line with one study that assessed the effect of the *Academia da Cidade* Program on the levels of physical activity of the population of the city of Recife, Pernambuco, Brazil. The data demonstrated that self-reported prior participation in the program and having heard of or having seen the activities developed by this strategy significantly increased the levels of physical exercise within leisure activities.[33] These results reinforce the importance of making people aware of the program in an attempt to enhance the levels of physical activity in the population as a whole,[34] which is an important strategy to be considered in the implementation of *Academias da Saúde* throughout the country, which are aimed at promoting the efficiency of the program.

To properly promote the program, it is vital to reinforce the importance of a greater integration of different primary health services in an attempt to build a sense of integral care, especially that offered by healthcare professionals, who are important references in formulating the concept of health among patients. It is also important to remember that the main purpose of the *Academia da Cidade* Program is to allow for the largest possible number of people to benefit from an increase in physical activity and other actions that promote a healthy lifestyle.[34] However, in Belo Horizonte, patients have mainly been using the *Academia da Cidade* to cure themselves, which is predominate within the profiles of users who present some sort of health disorder. This fact can limit health promotion actions due to an excessive demand for a cure.[35]

As regards the other variables investigated in this study, the sedentary lifestyle proved not to be influenced by socioeconomic conditions, health behaviors, self-reported morbidity, the use of healthcare services, and the nutritional state. Although some authors affirm that a higher socioeconomic condition is associated with a greater frequency of physical activity,[9,11,13,27] it is important to emphasize that in some domains, such as domestic or work activities, the most well-educated individuals are also the most sedentary.[36]

In other studies, smoking and alcohol consumption also proved not to be associated with a sedentary lifestyle,[13,37] while the worst perception of health has been associated with the lack of physical exercise.[13,30,37] A significant association with BMI was observed in Joaçaba, Santa Catarina,[31] but not in the adult population of Pelotas.[30] This diversity of results illustrates that the profile of factors associated with the lack of physical activity can vary among populations, and it is important to understand this pattern so as to formulate an appropriate adoption of health policies geared toward encouraging physical activity.

It is also important to point out that the greater frequency of physical exercise as medical advice among hypertensive and diabetic patients, who reported a higher number of doctor's appointments,[38] may well explain the non-association between these variables and the sedentary lifestyle among the participants of this study, reinforcing the importance of medical advice as a strategy to be expanded to other populations, aimed at fostering health prevention and promotion.

FINAL CONSIDERATIONS

The present study used the IPAQ to estimate the energy expenditure of users of healthcare services, which has the advantage of being an instrument that is widely used to assess physical activity and that has been validated for Brazil.[39] However, the IPAQ-short version does not allow for the fractioning of the physical activities performed in different domains and thus does not allow for a detailed study of this information. Moreover, it was also impossible to affirm the temporality of the observed associations, an inherent limitation of cross-sectional studies. Nonetheless, the high prevalence of sedentary lifestyles in the studied population, as well as the importance of prior knowledge of the *Academia da Cidade* to raise the level of physical activity of the individuals, does stand out. It is therefore clear that understanding the profile of healthcare service users, especially in the regions where the *Academia da Cidade* Program has already been implemented, in an attempt to aid in the planning of healthcare strategies and in the assessment of the possible impacts of this health promotion program, which has been adopted across the nation, is of utmost importance.

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