Association between leisure-time physical activity and knowledge and participation in public physical activity programs among Brazilian older people

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Abstract

Objective: To evaluate the prevalence of leisure-time physical activity among elderly Brazilians and its association with knowledge and participation in public programs to promote this practice. *Method*: Cross-sectional study with data from 11,177 older adults from the 2013 National Health Survey. The response variable was the practice of leisure-time physical activity. The explanatory variables were knowledge and participation in public programs to promote physical activity, sociodemographic and lifestyle characteristics. The crude and adjusted association was estimated by Poisson regression with robust variance. *Results*: Most of the elderly were female and were between 60 and 69 years old; 17% knew but did not participate in public programs to promote physical activity, and only 3.2% knew and participated. The prevalence of active leisure time was 13.3%. In the adjusted analysis, it was higher among older adults who knew but did not participate and kew and participated in public programs to promote physical activity, in men, aged 60 to 79 years old, with five years old or more education; from the Northeast and Midwest regions, with chronic diseases, who had three or more medical appointments in the last 12 months and consumed fruits and vegetables five or more days a week. Conclusion: The study showed a low adherence of the elderly to the practice of physical activity, and little knowledge and participation in public programs. Efforts are needed to expand the dissemination of these programs, promote the involvement of the population in these practices, and contribute to active aging.

Keywords: Elderly. Physical activity. Health Promotion. Health Survey.

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INTRODUCTION

Physical inactivity has been a problem in the world, considered one of the main risk factors for chronic non-communicable diseases (NCDs) and responsible for 7.2% and 7.6% of deaths from all causes and cardiovascular diseases, respectively[1,2]. Physical inactivity increases with age, being more frequent among women and in high-income countries[3,4]. This condition is worsened by demographic growth, urbanization and the aging of the population[5]. Inequalities in access and opportunities for physical activity, such as the lack of adequate places and equipment, socioeconomic factors and access to information are shown to be barriers to adopting an active lifestyle[6,7].

In this context, in 2006, in Brazil, the National Health Promotion Policy (PNPS) was implemented to face non-communicable diseases and conditions and their risk factors within the scope of the Unified Health System. One of the priority themes of the PNPS was body practices and physical activities. In 2011, the Health Academy Program (PAS) was implemented at the national level, which aims to promote the health of the population through the implementation of centers with infrastructure, equipment and qualified professionals to guide body practices and physical activity and healthy lifestyles8. Despite the growing number of actions to promote physical activity, its distribution is uneven among population subgroups and regions of the country[9-11].

The practice of physical activity is influenced, in addition to individual and social factors, by knowledge and access to adequate facilities and spaces. However, in Brazil there is a low prevalence of knowledge and participation in public programs to promote physical activity among adults[12] and older people[13], and variation between regions of the country[12]. A systematic review showed that there are still few studies that assessed this theme, and among the studies carried out, it was possible to observe that in Curitiba, about 91.6% of the interviewees knew about it and 5.6% participated in the activities offered, in Recife 54.3% knew because they had seen a pole of the program, and in Vitória 31.5% reported knowing it and only 1.5% participated[14].

Thus, assessing knowledge and participation in community programs can contribute to the planning of measures that favor intersectoral approaches that include creating and improving access to places for physical activity[15,16] and promoting active aging[4,6]. Thus, the objective of this study was to assess the prevalence of leisure-time physical activity among Brazilian older people and its association with knowledge and participation in public programs to promote this practice.

METHOD

Study based on the analysis of secondary data from the 2013 National Health Survey (PNS), a nationwide population-based survey, available on the website of the Brazilian Institute of Geography and Statistics – IBGE[17]. The first edition of the PNS was in 2013, with an expected sample of 80,000 households and aimed to investigate the lifestyles of the Brazilian population, such as the practice of physical activity, food, among others[18].

The study population comprised residents of permanent private households, that is, for the sole purpose of housing in all regions of Brazil. The PNS sample excluded households located in special or sparsely populated census sectors. A cluster sampling was adopted in three stages: census tracts; households and residents over 18 years of age. A total of 60,202 interviews were carried out with a percentage of losses of 25%. More information is available in the study by Szwarcwald et al[18]. In the present study, all interviewed individuals aged 60 and over (n=11,177) were included.

The PNS questionnaire was divided into three parts, the first two being answered by a resident of the household and covering questions about the characteristics of this household and the socioeconomic and health status of all residents. The other questionnaire was individual, answered by a resident aged 18 years and over, with questions addressing the main NCDs, lifestyles, and access to medical care.[18].

The practice of physical activity during leisure time, the response variable of this study, was obtained through a score by multiplying the weekly frequency by the duration of the activity performed (in minutes).

In the present research, the final score was divided into two categories: active and inactive during leisure time. Participants were considered active if they practiced at least 150 minutes per week of light or moderate physical activity, or at least 75 minutes/week of vigorous leisure-time physical activity, or a combination of moderate and vigorous physical activities totaling 150 minutes per week, according to the World Health Organization (WHO) recommendation[19].

The main explanatory variable refers to knowledge and participation in community programs to promote physical activity and was obtained from the combination of two questions: "Do you know of any public program in your municipality that encourages physical activity? (yes and no)" and "Do you participate in this program? (yes and no)", and were considered as answer options do not know, know, but do not participate or know and participate.

The other explanatory variables were: a) sociodemographic characteristics: age group (60-69, 70-79 and 80 or more); sex (female and male); education in years of study (0-4, 5-8, 9-11 and 12 or more); geographic region (North, Northeast, South, Southeast and Midwest); marital status (married, unmarried), and the unmarried person comprises the alternatives legally separated or divorced, divorced, widowed, single; b) lifestyle: number of NCDs (none, one, two, three or more) was obtained by adding the questions "Has a doctor ever diagnosed you with high blood pressure, diabetes, high cholesterol, heart disease (heart attack, angina, heart or other failure), stroke, asthma (or asthmatic bronchitis), arthritis or rheumatism, WMSD (work-related musculoskeletal disease), lung disease or COPD (Chronic Obstructive Pulmonary Disease), (emphysema, chronic bronchitis or other), cancer, chronic kidney failure or other chronic physical or mental illness or long-term illness?", "Do you have any chronic back problems, such as chronic back or neck pain, low back pain, sciatica, spinal or disc problems?" and "Has a doctor or mental health professional (such as a psychiatrist or psychologist) ever given you a diagnosis of depression or another mental illness (schizophrenia, bipolar disorder, psychosis or OCD (Obsessive Compulsive Disorder), another mental illness)?" answer options: yes or no; number of medical appointments in the 12 months prior to the interview (none, 1-2, 3 or more); and consumption of fruits and vegetables (less than 5 days a week, 5 days or more a week) obtained from the combination of the following questions: "How many days a week do you usually eat lettuce and tomato or salad of any other raw green or vegetable?", "How many days a week do you usually eat cooked greens or vegetables, such as cabbage, carrots, chayote, eggplant, zucchini? (not counting potatoes, cassava or yams)", "How many days a week do you usually drink natural fruit juice?", "How many days a week do you usually eat fruits?".

In the statistical analysis, relative frequency distribution was performed for the categorical variables. The prevalence of knowledge, participation and leisure-time physical activity and their respective 95% confidence intervals (95%CI) were estimated, according to sociodemographic and lifestyle variables. The association between knowledge and participation and sociodemographic and lifestyle variables was verified using Pearson's chi-square test. For the analysis of the adjusted and unadjusted association between the practice of physical activity during leisure time and the independent variables, the prevalence ratio and respective 95%CI were estimated using Poisson regression with robust variance. To assess the quality of fit of the final model, the *Goodness-of-fit* test was used. All analyzes were performed in the *survey* module for complex sample data analysis. A significance level of 5% was adopted. The PNS was approved by the National Research Ethics Commission (CONEP), under Opinion No. 328,159, of June 26, 2013. All participating individuals signed an informed consent form.

RESULTS

Among the 11,177 respondents aged 60 years or older, most were female, aged 60 to 69 years, married, with 0 to 4 years of education, residing in the Southeast region, with three or more chronic diseases, with a history of medical consultations in the last 12 months, and did not consume fruits and vegetables regularly (Table 1).

In the population studied, 17.0% (95%CI:15.6-18.4) knew about, but did not participate in,

community programs, and only 3.2% (95%CI:2.7-3.8) knew and participated in these programs. Knowledge and participation were higher among females, 60 to 69 years old, 9 to 11 years of education, South region, two or three or more chronic diseases, three or more medical consultations in the last 12 months, and who consumed fruits and vegetables regularly. A similar profile was observed for those who reported knowing but not participating, with the exception of the education variable, in which the highest frequency was among those with 12 years or more of education and the Southeast region (Table 2).

Table 1. Relative frequency distribution and 95% confidence interval (95%CI) of sociodemographic and lifestyle variables. National Health Survey, Brazil, 2013.

Variables	% (95%CI)
Sociodemographic	
Sex	
Male	43.6 (42.0-45.2)
Female	56.4 (42.0-45.2)
Age group	
60-69 years	56.4 (54.7-58.1)
70-79 years	29.9 (28.5-31.5)
80 or more	13.7 (12.6-14.8)
Marital status	
Married	53.2 (51.6-54.8)
Not married	46.8 (45.1-48.4)
Education	
0-4 years	61.2 (59.4-63.0)
5-8 years	15.9 (14.6-17.2)
9-11 years	12.5 (11.5-13.6)
12 or more	10.4 (9.2-11.8)
Region	
Southeast	48.0 (46.4-49.4)
North East	25.2 (24.1-26.4)
South	15.1 (14.2-16.0)
Midwest	6.4 (5.9-6.8)
North	5.4 (5.0-5.8)
Lifestyle	
Number of chronic diseases	
None	21.6 (20.3-23.1)
One	25.6 (24.4-26.9)
Two	22.0 (20.6-23.4)
Three or more	30.6 (29.1-32.3)
Number of medical appointments in the last 12 months	
None	15.4 (14.4-16.6)
One to two	30.1 (28.6-31.6)
Three or more	54.5 (52.8-56.1)
Consumption of fruits and vegetables	
5 days or more per week	44.5 (42.8-46.3)
Less than 5 days a week	55.5 (53.7-57.2)

Table 2. Knowledge and participation of older people in public programs to promote physical activity according to sociodemographic and lifestyle variables. National Health Survey, Brazil, 2013.

Variables	Public programs to promote physical activity			
	Does not know % (95%CI)	Knows but does not participate % (95%CI)	Knows and participates % (95%CI)	p[1]
Sociodemographic				
Sex				
Male	83.4 (81.3-85.3)	14.6 (12.8-16.6)	2.0 (1.4-2.8)	<0.001
Female	77.0 (74.9-78.9)	18.8 (16.9-20.8)	4.2 (3.5-5.0)	
Age group				
60-69 years	78.0 (76.2-79.8)	18.1 (16.5-19.9)	3.9 (3.0-4.8)	<0.001
70-79 years	79.4 (76.5-82.0)	17.6 (15.1-20.4)	3.0 (2.3-3.8)	
80 or more	87.9 (85.4-90.2)	10.8 (8.7-13.3)	1.2 (0.7-2.0)	
Marital status				
Married	79.5 (77.5-81.5)	17.1 (15.3-19.1)	3.4 (2.6-4.3)	0.833
Not married	80.1 (78.2-81.9)	16.8 (15.1-18.6)	3.1 (2.5-3.8)	
Education				
0-4 years	83.7 (81.9-85.3)	13.2 (11.7-14.9)	3.1 (2.5-3.9)	<0.001
5-8 years	78.8 (75.3-81.9)	17.5 (14.5-20.9)	3.7 (2.6-5.2)	
9-11 years	70.2 (66.1-73.9)	26.0 (22.4-30.0)	3.8 (2.6-5.5)	
12 or more	70.2 (64.8-75.2)	27.2 (22.3-32.8)	2.5 (1.7-3.7)	
Region				
North East	87.1 (85.1-88.8)	10.9 (9.3-12.6)	2.0 (1.4-3.0)	<0.001
Southeast	75.9 (73.4-78.3)	20.4 (18.0-22.9)	3.7 (2.9-4.7)	
South	76.1 (72.3-79.4)	20.0 (16.9-23.5)	3.9 (2.7-5.7)	
Midwest	81.0 (77.4-84.1)	15.7 (12.8-19.0)	3.3 (2.3-4.8)	
North	89.5 (85.7-92.3)	8.1 (6.0-10.9)	2.4 (1.4-4.1)	
Lifestyle				
Number of chronic diseases				
None	84.9 (81.9-87.5)	13.2 (10.7-16.1)	1.9 (1.3-2.9)	<0.001
One	81.4 (78.8-83.7)	16.4 (14.1-18.8)	2.2 (1.6-3.1)	
Two	78.7 (75.4-81.7)	17.1 (14.3-20.3)	4.2 (3.0-5.8)	
Three or more	75.7 (72.9-78.4)	20.1 (17.4-22.9)	4.2 (3.2-5.5)	
Number of medical appointments in the last 12 months				
None	85.5 (82.3-88.1)	12.6 (10.1-15.5)	1.9 (0.9-3.8)	<0.001
One to two	81.3 (79.1-83.4)	16.6 (14.6-18.8)	2.1 (1.5-2.8)	
Three or more	77.4 (75.3-79.3)	18.4 (16.5-20.4)	4.2 (3.5-5.1)	
Consumption of fruits and vegetables				
5 days or more per week	75.0 (72.7-77.1)	20.5 (18.5-22.7)	4.5 (3.6-5.6)	<0.001
Less than 5 days a week	83.7 (81.9-85.3)	14.1 (12.5-15.8)	2.2 (1.7-2.8)	

Key: 95%CI: 95% confidence interval; [1] p-value by Pearson's chi-square test.

The prevalence of leisure-time physical activity was 13.3% (95%CI: 12.2-14.4), being, in the unadjusted analysis, higher among older people who knew, but did not participate or knew and participated in community programs to promote the practice of physical activity, aged 60 to 69 years, married, with 12 years or more of education, residing in the Midwest region, who had two chronic diseases, had three or more medical consultations in the last 12 months and consumed fruits and vegetables regularly (Table 3).

In the adjusted analysis, only marital status lost statistical significance. The highest prevalence ratio of leisure-time physical activity was among older people who knew but did not participate (PR=1.39; 95%CI:1.13-1.70) or knew and participated (PR=4.32; 95%CI:3.49-5.33) of programs, male (PR=1.32; 95%CI:1.13-1.53), aged between 60 and 69 years (PR=2.14; 95%CI:1.48-3.10), with 12 years or more of education (PR=3.09; 95%CI:2.52-3.78), residing in the Midwest (PR=1.46; 95%CI:1.02-2.08), and Northeast (PR=1.65; 95%CI:1.17-2.33) regions, which had two chronic diseases (PR=1.53; 95%CI:1, 21-1.94), had three or more medical consultations in the last 12 months (PR=1.37; 95%CI:1.01-1.85) and regularly consumed fruits and vegetables (PR=1.73; 95%CI:1.47-2.04) (Figure 1).

Table 3. Prevalence and prevalence ratio of leisure-time physical activity according to knowledge and participation in public programs to promote physical activity, sociodemographic and lifestyle variables. National Health Survey, Brazil, 2013.

Variables	Prevalence (95%CI)	Unadjusted analysis	
		PR	95%CI
Public programs to promote physical activity			
Knows and participates	52.0 (43.0-60.9)	4.86	3.98-5.91*
Knows but does not participate	18.5 (15.2-22.2)	1.73	1.39-2.13*
Does not know	10.7 (9.7-11.8)	1.00	
Sociodemographic			
Sex			
Male	14.2 (12.5-16.1)	1.13	0.96-1.33
Female	12.6 (11.3-13.9)	1.00	
Age group			
60-69 years	16.1(14.8-17.8)	2.93	2.02-4.23*
70-79 years	11.4 (9.6-13.5)	2.07	1.38-3.05*
80 or more	5.5 (3.9-7.8)	1.00	
Marital status			
Married	14.9 (13.3-16.7)	1.30	1.10-1.53*
Not married	11.5 (10.2-12.9)	1.00	
Education			
0-4 years	8.3 (7.2-9.5)	1.00	
5-8 years	14.0 (11.4-17.1)	1.69	1.32-2.16*
9-11 years	20.3 (17.0-24.1)	2.45	1.95-3.05*
12 or more	33.2 (28.1-38.7)	4.00	3.23-4.93*
Region			
North East	13.2 (11.4-15.3)	1.67	1.16-2.42*
Southeast	13.3 (11.6-15.1)	1.68	1.17-2.41*
South	14.8 (12.4-17.5)	1.87	1.28-2.73*
Midwest	14.9 (12.5-17.9)	1.89	1.29-2.78*
North	7.9 (5.6-11.0)	1.00	

to be continued

Continuation of Table 3

Variables	Prevalence (95%CI)	Unadjusted analysis	
		PR	95%CI
Lifestyle			
Number of chronic diseases			
None	11.6 (9.6-14.2)	1.03	0.79-1.34
One	13.7 (11.7-15.9)	1.21	0.97-1.52
Two	17.3 (14.7-20.2)	1.53	1.21-1.93*
Three or more	11.3 (9.6-13.2)	1.00	
Number of medical appointments in the last 12 months			
None	8.8 (6.5-11.9)	1.00	
One to two	14.0 (12.2-16.1)	1.59	1.14-2.22*
Three or more	14.2 (12.8- 15.7)	1.61	1.17-2.21*
Consumption of fruits and vegetables			
5 days or more per week	19.1 (17.2-21.0)	2.20	1.85-2.60*
Less than 5 days a week	8.7 (7.6-19.1)	1.00	

Key: PR: Prevalence Ratio; 95%CI: 95% confidence interval; *p<0.05.

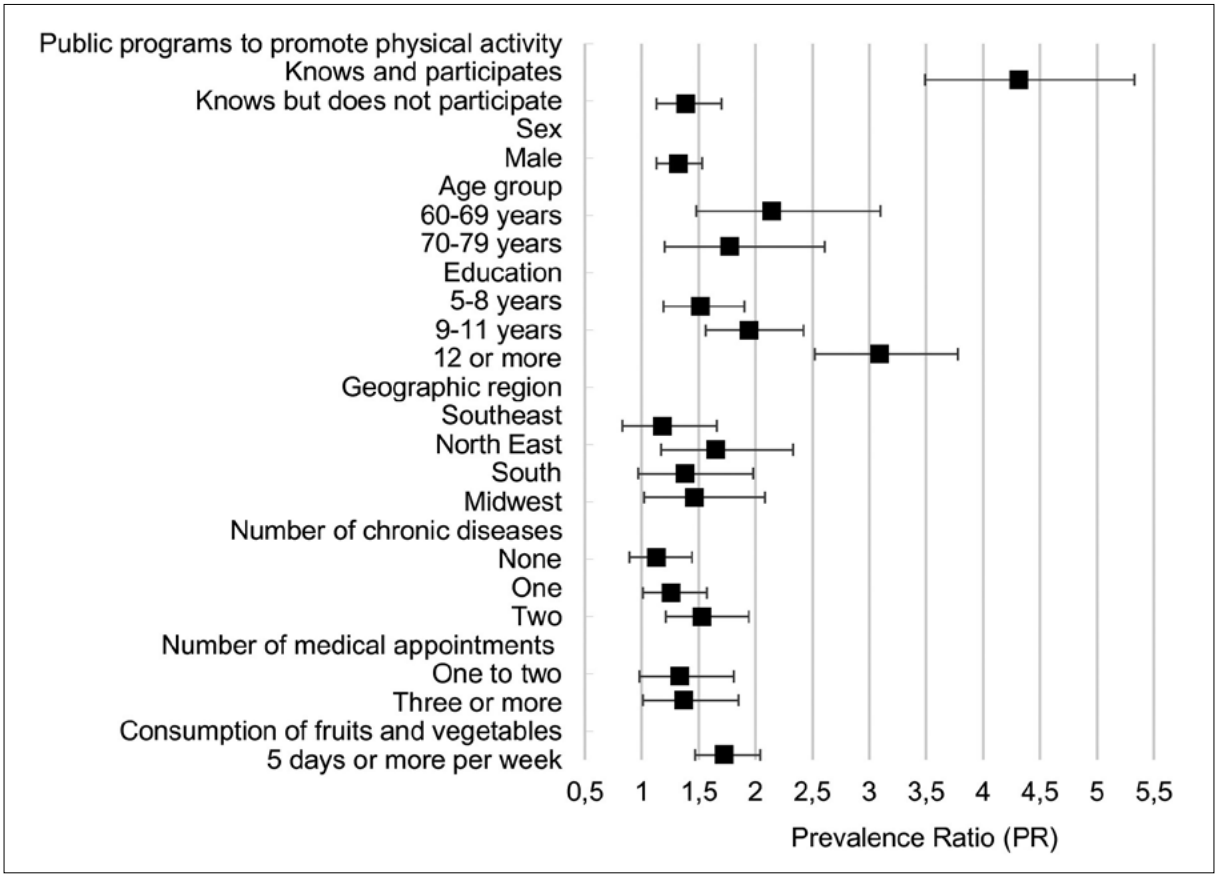

Figure 1. Adjusted prevalence ratio of leisure-time physical activity according to knowledge and participation in public programs to promote physical activity, sociodemographic and lifestyle variables. National Health Survey, Brazil, 2013.

DISCUSSION

In the present study, a low prevalence of recommended levels of leisure activity was observed among older people, as well as low knowledge and participation in community programs to promote physical activity. Knowledge, but not participation, and knowledge and participation were higher among older people aged 60 to 69 years, female, married, living in the South and Southeast regions, who reported three or more chronic diseases, three or more medical appointments in the last 12 months and regular consumption of fruits and vegetables. Knowledge, but not participation, was higher among older people with education greater than or equal to 12 years, and knowledge and participation among those aged 9 to 11 years. The highest prevalence of leisure-time physical activity was associated with knowledge, but not participation, and knowledge and participation in community programs to promote physical activity, male, aged between 60 and 69 years, with 12 years or more of education, with two chronic diseases, who reported three or more medical appointments in the last 12 months, consumed fruits and vegetables regularly, and lived in the Northeast and Midwest regions.

The low prevalence of knowledge, but not participation and knowledge and participation of older people in public programs to promote physical activity, was identified in the present study. This result is similar to that found in the study by Ferreira et al[12], in which 20% of Brazilians aged 18 years or older reported being familiar with the programs, and of these, 9.7% participated. This study also showed that knowledge and participation were more frequent in older age categories. A study that assessed Brazilian older people, with data from the 2013 PNS, found that the most frequent reason for non-participation was lack of interest, lack of time and health problems[13].

This result indicates that despite the transfer of 170 million reais, in the period from 2006 to 2010, to state and municipal departments in all regions of Brazil, which integrated the National Health Promotion Network, the coverage of these programs at the national level is still small[8]. This can be partly explained by the fact that these are recent policies, which are still under construction and that some municipalities may not have sufficient administrative organization to implement the actions. In addition, the lack of diversity in physical activities offered by public programs may impose restrictions on participation for different age and social groups[12,13].

The greater knowledge and participation among women can be attributed to the fact that they are more concerned with health, availability of time and consider the activities offered in the programs appropriate for their preferences[20-23]. Greater knowledge but not participation and knowledge and participation among older people aged 60 to 69 years may be related to health conditions. According to Silva et al[22] who carried out a study with users of programs to promote physical activity developed in primary health care in Pernambuco, the main barrier reported was the current health condition. Biehl-Printes et al[13], who investigated the reasons for not participating in public physical activity programs among Brazilian older people, showed that lack of interest and health problems were the most reported barriers among older people aged 80 years or older compared to those aged from 60 to 79 years.

Our results showed a higher frequency of knowledge, but not participation in public physical activity programs among older people with 12 years of education or more. These findings are consistent with the literature, since education can interfere with the acquisition of knowledge about aspects related to health care, benefits of regular physical activity, in addition to influencing access to public and private places that are adequate and safe to pracice physical activities[7,12]. While knowledge and participation was higher among those with 9 to 11 years of education. Studies have shown that participants in these programs have low levels of education20,23. In this sense, policies to promote physical activity at the community level can contribute to reducing health inequities and promoting the adoption of an active lifestyle by the population.

The prevalence of knowledge, but not participation, and knowledge and participation was uneven across regions in Brazil, which can be attributed to differences in policies and actions to promote physical activity at the local and federal

levels, as well as the lack of specialized human resources in the area of physical activity and health promotion. In 2013, the year in which the PNS was carried out, all regions of Brazil had actions for the development of public programs to promote physical activity through the National Physical Activity Network that make up the actions of the PNPS. The Midwest region had the highest number of physical activity programs financed by the Ministry of Health (MS) of Brazil, followed by the Southeast, Northeast, South and North[9]. In 2017, 48% of the country's municipalities had at least one pole of the program, a total of 3,821 qualified poles, being higher in the North and Northeast regions (55.3% and 54.7%, respectively)[10].

Public programs to promote physical activity in Brazil are aimed primarily at serving older people and groups with chronic diseases or specific conditions, such as diabetes, hypertension and obesity, among others. These spaces also carry out health education actions and promote healthy eating[9,11]. Which could explain greater knowledge, but not participation, and knowledge and participation among older people who reported three or more chronic diseases, three or more medical appointments in the last 12 months and regular consumption of fruits and vegetables.

The prevalence of leisure-time physical activity in the present study was lower compared to other studies[24-26]. The WHO showed that 45% of the world's older population were active in 2010[24]. In the 26 capitals and the Federal District, in 2019, the prevalence of leisure-time physical activity was 39.0%, and with a decrease with increasing age, being 24.4% (95%CI 23.1 - 25.6%) among older people (65 years and over)[25]. A study carried out with older people in the city of São Paulo/SP, 2014/2015, identified 25.3% of active people in leisure time (32.1% for men and 20.3% for women)[26]. The differences in the prevalence of leisure-time physical activity between the studies may be related to the form of data collection, telephone or face-to-face interviews, as well as the sample representativeness.

An important aspect observed in this study was the association between the higher prevalence of physical activity in leisure time and knowledge, but not participation and knowledge and participation in public physical activity programs, with a higher prevalence ratio among those who participated and knew. According to a systematic review that synthesized the evidence available in the literature on physical activity promotion programs in the Brazilian Unified Health System, those who attended the programs were more physically active in their free time and walking, when compared with those who did not participate or did not know[14]. Peixoto et al[27] found a higher prevalence of global physical activity among adults aged 50 years or older who reported knowing about or participating in a public program to encourage this practice, even after adjusting for other individual variables.

Previous studies that investigated the effectiveness of implementing community programs to promote physical activity in Brazil, such as the Academia da Saúde Program (PAS) in Recife/PE, Aracaju/SE and Belo Horizonte/MG, and other initiatives developed in the cities of Curitiba/PR and Vitória/ES, demonstrated the ability of these programs to provide the population with greater access to spaces for physical activity and contribute to the increase in recommended levels of physical activity[8, 9, 28].

A study carried out in Recife showed that the prevalence of physical activity was higher among individuals exposed to PAS, whether through participation or having heard about or seen an activity, compared to those not exposed[29]. In Belo Horizonte, the PAS proved to be able to influence the practice of leisure-time physical activity by non-users who lived close to the poles of the program[30]. The presence of these programs, as well as the implementation process based on the articulation of public policies in the area of urbanization and environment, can provide alternatives to overcome the barriers related to the practice of physical activity, from more distal factors, such as the characteristics of the context, to the more proximal[28].

As consistently reported in the literature, an association was observed between leisure-time physical activity and the variables gender, age group and education[4,31]. A study carried out with individuals aged 10 years or older participating in programs to promote physical activities in primary health care in municipalities in the state of Pernambuco, observed

that although women had greater participation, they reported the existence of more barriers to performing the physical activity[22]. The reduction in the prevalence of leisure-time actives with increasing age, even among the population over 60 years of age, as in the present study, can be explained by biological factors, such as limitations imposed by age and the burden of disease, even related to the environment, such as safety aspects, availability of public and private structures (gyms, squares, courts, health centers and banks) and social support[6,7]. Education is related to a better level of knowledge and understanding of the importance of physical activity for health, as well as an association with economic status that can facilitate access to private places to practice physical activity[12,24].

In the present study, older people living in the Northeast and Midwest regions were more active in leisure time. A study that investigated regional differences in leisure-time physical activity with data from the PNS showed that among those aged 65 and over, the prevalence of active individuals was always lower in the North region, and that the North and Northeast regions were those that presented the highest differences between age groups, while the South region showed the smallest difference[32]. Regional differences could be explained by: i) difference in age structure between regions, with a greater presence of young population in the North region; ii) socioeconomic inequalities that influence opportunities to access spaces conducive to physical activity; iii) development of local and federal actions and policies to promote physical activity[32]. The Northeast and Midwest regions, in 2013, represented 35% of cities with physical activity promotion programs financed by the Ministry of Health in Brazil[9].

The results showed that the prevalence of active leisure time was higher among older people who reported having two chronic diseases, having three or more medical appointments in the last 12 months and consuming fruits and vegetables five or more times a week. Ribeiro et al[21], in a study carried out with participants aged 60 years and over in the Núcleo de Atividades para a Terceira Idade (Nucleus of Activities for Older People) program in the city of Pelotas/RS, observed that one of the reasons for older people to practice physical activity was to seek to avoid or prevent health problems (68.8%) and because the doctor advised (59.8%). Silva et al[33], in a study with individuals aged 60 years or older, participants of the Health Survey of the Municipality of Campinas (ISACAMP), showed that inadequate consumption of dietary fiber (tubers and roots, whole grains, legumes, fruits and vegetables) was more frequent among physically inactive older people. The higher consumption of fruits and vegetables on a regular basis can be attributed to a search for healthier habits among active people.

Knowing the factors associated with the practice of physical activity among older people, especially knowledge and participation in community programs to promote physical activity, can indicate priority groups, for which specific actions can be directed. The practice of physical activity should become a habitual reality in the lives of older people, and can improve quality of life, increase life expectancy, prevent diseases, control the progression and symptoms of diseases.[9,12,34,35]. Community programs to promote physical activity are a promising action, as they contribute to the promotion of the population's health, reducing health inequalities[8]. With the increase in the older population, it is important to maintain actions that promote active aging[5,6].

In this sense, the Physical Activity Guide for the Brazilian Population was recently published, prepared by the MS in partnership with researchers in the area of physical activity and health[35]. The guide provides information on the health benefits of physical activity and recommendations for different groups and life cycles. In addition to presenting messages to overcome the main barriers of physical activity and informing about existing support networks, such as public programs to promote this practice[35].

Regarding the limitations of the study, the cross-sectional design and the use of referred information should be considered. The practice of physical activity was measured only in the leisure domain, chosen because of its potential for intervention. Knowledge but not participation and knowledge and participation were measured by single and general questions about the interviewee's perception of these aspects, not allowing the identification of the type of program (incentive, educational, recreational, welfare, among

others), the scope population and management sphere. In addition, the only socioeconomic variable included in the study was education, and studies have shown an association between income and physical activity[5-7] and participation[12,34]. However, the present study has as a strong point being a sample with representation from all regions of Brazil.

CONCLUSION

A small portion of Brazilian older people reported knowing, but not participating, and knowing and participating in public physical activity programs, and reached the recommended levels of leisure-time physical activity. Sociodemographic and lifestyle factors were associated with knowledge, but not participation, and knowledge and participation, allowing the identification of the most vulnerable groups: older people aged 80 years and over, male, who had not attended medical appointments in the last 12 months, with irregular consumption of fruits and vegetables, and living in the North region. The practice of leisure-time physical activity was higher among older people who knew, but did not participate and knew and participated in public places to promote this practice, male, aged between 60 and 69 years, with 12 years of esducation or more, residents of the Midwest and Northeast, who had two chronic diseases, had three or more medical appointments in the last 12 months and consumed fruits and vegetables regularly.

The study results reinforce the need to expand informative, environmental and public policy approaches to improve access to public places for physical activity. Disseminating information, in the media and in the community, regarding the benefits of physical activity and promoting the involvement of the population in these practices can increase knowledge, understanding and appreciation of the multiple benefits of regular physical activity. Aspects related to the supply, accessibility and quality of spaces must be assessed in order to promote equitable access to safe spaces that provide opportunities and programs in different contexts for all ages.

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