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Sociodemographic and health factors interfering with functionality and physical activity of the elderly

Fatores sociodemográficos e de saúde intervenientes na funcionalidade e atividade física de idosos

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ABSTRACT
This cross-sectional study aimed to identify the sociodemographic and health factors involved in functionality and physical activity of 654 elderly users of Basic Health Units in Maringá, state of Paraná, Brazil. The sociodemographic and health profile questionnaire, the International Physical Activity Questionnaire, and the WHODAS 2.0 were used. Data were analyzed using the Kolmogorov-Smirnov, Kruskal-Wallis and Mann-Whitney U-tests ($p<0.05$). Women perform more moderate activities per day ($p=0.039$) and per week ($p= 0.048$). Men have less understanding and communication difficulties ($p=0.011$), mobility ($p=0.001$), activities of daily living ($p=0.004$), social participation ($p=0.023$) and better overall functionality ($p=0.001$). Elderly from 70 to 79 years old have better functionality than younger and those aged 80 or over ($p=0.032$). Gender, age group and history of falls are interfering with the duration and frequency of physical activity, as well as their functionality.

KEY WORDS: Gerontology. Health promotion. Health unit system. Motor activity.

RESUMO
O presente estudo transversal teve como objetivo identificar os fatores sociodemográficos e de saúde intervenientes na funcionalidade e atividade física de 654 idosos usuários das Unidades Básicas de Saúde (UBSs) de Maringá, Paraná, Brasil. Utilizou-se questionário de perfil sociodemográfico e de saúde, o *International Physical Activity Questionnaire*, e o WHODAS 2.0. A análise dos dados foi feita por meio do *teste Kolmogorov-Smirnov*, *Kruskal-Wallis* e "U" de *Mann-Whitney* ($p<0,05$). As mulheres realizam mais atividades moderadas por dia ($p=0,039$) e por semana ($p=0,048$). Os homens possuem menos dificuldades de compreensão e comunicação ($p=0,011$), mobilidade ($p=0,001$), atividades da vida diária ($p=0,004$), participação social ($p=0,023$) e melhor funcionalidade total ($p=0,001$). Idosos de 70 a 79 anos apresentam melhor funcionalidade do que os mais jovens e os com 80 anos ou mais ($p=0,032$). Sexo, faixa etária e histórico de quedas são intervenientes na duração e frequência da prática de atividade física dos idosos e em sua funcionalidade.

Palavras-chave: Atividade motora. Gerontologia. Promoção da saúde. Sistema Único de Saúde.

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INTRODUCTION

Physical activity is an important health indicator in the elderly, and evidence suggests that it is associated with a low risk of morbidity and mortality from cardiometabolic, musculoskeletal diseases and some types of cancer[1]. In contrast, low level of physical activity increases the risk of hospitalization, institutionalization and premature death[2], affecting elderly people of all ages, genders and races and becoming a major public health problem[3]. Therefore, knowing the factors that interfere with physical inactivity is a relevant means of promoting health and reducing risk factors[4].

Surveillance and monitoring studies in physical activity have pointed to high prevalence of physical inactivity in elderly people in different regions of the world[5,6] - in Brazil, it corresponds to 36.1%[7] among those over 65 years of age. In this sense, the American College of Sports Medicine (ACSM)[8] recommends, for maintenance and health of these people: at least 30 minutes of light/moderate physical activity, five days a week; or intense activities lasting at least 20 minutes, three times a week; or combinations between moderate and intense activities. These recommendations are used to classify the level of physical activity and form the basis for professional practice. Lower values are associated with loss of independence and disabilities in the elderly population[9].

However, for the elderly, it is not enough to have good levels of physical activity, but it is also essential to have a good level of functionality during longevity[10]. Thus, the The International Classification of Functioning, Disability, and Health (ICF), of the World Health Organization (WHO), defines disability as a negative aspect of the interaction between the subject (with a health condition) and the individual contextual factors (personal and environmental factors)[11]. These interactions include: deficiencies (affecting the body); activity limitations (affecting action or behaviors); and participation restrictions (affecting life experience)[12]. Almost 40% elderly currently experience some type of limitation or functional disability[13], and, among the factors involved in the physical activity and functionality of the elderly, socioeconomic level, sex, education, age and ethical and health aspects have been reported in the literature as determinants in the different domains of these variables[3,9,14].

Among the ways to prevent these limitations or disabilities, the primary one represents one of the many strategies to achieve healthy aging. Preventive care can significantly improve the survival and well-being of the elderly and helps control health spending[15]. In this context, Rocha et al.[16] mention that health promotion programs of Basic Health Units (UBSs) related to physical activity are an initiative aimed at healthy aging and should be prioritized in interventions carried out in these places, once in addition to the numerous physiological, psychological and social benefits, they can generate great savings in the health sector. Currently, a large part of the elderly population attends UBSs daily, using all the possibilities or activities that the system offers, such as frequent consultations with doctors, searching for medications and carrying out tests, programs to prevent and combat diseases, vaccines, etc.

This work fills a need for potentially useful information for the management of the Unified Health System (SUS). In addition, it is in line with one of the guidelines proposed by the National Health Policy for the Elderly, which reinforces the importance of developing studies and research aimed at bringing improvements to the services offered[17].

In view of the above - and considering the scarcity of population data on the prevalence and intervening factors in the physical activity and functionality of the elderly in the northwest of Paraná, in addition to the fact that such knowledge can bring important contributions to public health -, this study aimed to identify the sociodemographic and health factors involved in the functionality and physical activity of elderly users of UBSs in a municipality in that region

METHODS

This is a secondary article from the article by Oliveira et al.[18] previously published.

PARTICIPANTS

According to data obtained from the Municipal Health Secretariat of Maringá (state of Paraná), the target population is composed of 42,258 elderly people. The initial sample considered was 595 elderly, and 10% possible losses were added, totaling 654 people of both sexes. A 95% confidence level and a 4% margin of error were considered; the software used to obtain the calculations was StatDisk version 8.4.

The BHU of which the elderly are part were subdivided into four regions: east (seven BHUs), which includes 21.8% population; north (eight BHUs), with 34.5%; west (eight BHUs), with 23.2%; and south (eight BHUs), with 20.4%. After knowing this composition, three BHUs were selected at random to be evaluated in each of the regions. Once the sample size was defined and the BHUs were selected, it was important to maintain the proportion of elderly people in the total population in the sample; thus, the calculations for obtaining the final sample per BHU according to sex were proportional to the population.

The study included elderly people of both sexes aged 60 years or over, with preserved speech and hearing capacity, which allowed the questionnaires to be applied. The Mini Mental State Examination (MMSE) was applied to exclude elderly people with significant cognitive deficits, which consists of questions grouped into seven categories: temporal orientation, spatial orientation, three-word registration, attention and calculation, three-word recall, language and visual constructive ability. Cut-offs used for exclusion were: 17 for the illiterate; 22 for elderly people with schooling between 1 and 4 years; 24 for those with schooling between 5 and 8 years; and 26 for those with 9 or more years of schooling. These cut-off points were based on the criteria of Brucki et al.[19] and correspond to the average obtained by these authors for each educational level, minus one standard deviation.

Elderly people classified below the specific cut-off point for their education level, as well as those with neurological, auditory and visual deficits, which were noticeable to researchers - situations that prevented data collection - were excluded.

INSTRUMENTS

To characterize the sociodemographic and health profile of the elderly, a semi-structured questionnaire was applied, used primarily in another study[18]. The questionnaire contained questions related to: age (60 to 69 years; 70 to 79 years; 80 years or more); sex (male; female); marital status (married or living with a partner; single; divorced, married; widowed); race (white, black, other); occupational situation (works or does not work to earn income); monthly income in minimum wage (MW) of reference in the 2016 Demographic Census of the Brazilian Institute of Geography and Statistics (IBGE)[20] (1 to 2 MW; 2.1 to 3 MW; more than 3 MW); retirement (yes; no); education (did not study; incomplete elementary school; complete elementary school; complete high school; higher education); smoking (smokes; has smoked; does not smoke); self-perceived health status (poor; fair; good; very good); history of falls in the last six months (yes, no); history of near falls in the last six months (yes; no); number of drugs used (none; 1 to 2; more than 2); and morbidities (none; 1 or 2; 3 or more/which?).

The World Health Organization Disability Assessment Schedule (WHODAS) 2.0 is a disability assessment scale, built to measure functionality and was developed specifically to reflect the ICF. It consists of 12 items covering six domains of functionality in the period of 30 days (last month): understanding and communication; mobility; self-care; interpersonal relationships; daily life activity; and social participation. Each question is answered on a 5-point Likert scale, which ranges from no difficulty (0 points) to extreme self-reported difficulty (4 points). Each domain has two questions, that is, the score can vary from 0 (no difficulty) to 8 (extreme difficulty)[21].

The level of physical activity of the elderly was assessed using the short version of the International Physical Activity Questionnaire (IPAQ). The tool consists of seven open questions, and its information allows estimating the time spent per week in different dimensions of physical activity (walking and physical efforts of moderate and vigorous intensity) and physical inactivity (sitting position). The level of physical activity was classified as sedentary, irregularly active, active or very active[22].

PROCEDURES

This was an analytical epidemiological study, observational, cross-sectional, carried out in 12 BHUs - among the 33 existing in the municipality of Maringá (state of Paraná) - divided into the four regions (north, south, east and west). They were selected at random after authorization from the "Assessoria de Formação e Capacitação Permanente dos Trabalhadores de Saúde (Cecaps)".

Before the start of data collection, a team of ten researchers was properly trained, and a pilot test was carried out with 30 elderly people. Elderly volunteers were approached by the responsible researcher or by the research team and received information regarding the justification, objectives and procedures to be performed, according to guidelines for research with human beings contained in Resolution 196/96 of the National Health Council. After, those who agreed to participate in the study signed the Free and Informed Consent Form. The collection was carried out between March and July 2016 at the BHUs, on different days, shifts and times, according to the availability of the researchers. The research was approved by the Research Ethics Committee of the Centro Universitário de Maringá (UniCesumar) through opinion 1.777.797/2016.

We opted for the direct interview in the application of the questionnaires, due to the possible difficulty of reading, visual problems and understanding the questions.

DATA ANALYSIS

Data were analyzed using the SPSS 22.0 software and using a descriptive and inferential statistical approach. Frequency and percentage were used as descriptive measures for categorical variables. In the case of numerical variables, data normality was initially checked using the Kolmogorov-Smirnov test; as they did not present a normal distribution, Median (Md) and Quartiles (Q1; Q3) were used to characterize the results. When comparing the groups, the Chi-square test and the Kruskal-Wallis test were applied, followed by the Mann-Whitney "U" test for pairs of groups. A significance level of $p < 0.05$ was considered.

RESULTS

According to data previously presented by Oliveira et al.,[18] of the 654 elderly people evaluated, there was a prevalence of women (56.0%), married (61.3%), aged between 60 and 69 years (59.2%), monthly income of one to two minimum wages (70.0%), white race (81.0%) and retirees (75.0%). The majority of the elderly had incomplete elementary education (43.0%).

When analyzing the sociodemographic profile of the participants according to gender, there was a significant difference in the proportions forn marital status ($p=0.001$), age group ($p=0.001$), monthly income ($p=0.001$), race ($p=0.008$) and retirement ($p=0.001$). This result indicates that there is a higher proportion of elderly women who are widowed, aged between 60 and 69 years, with monthly income of one to two minimum wages and who are not retired. Regarding the health profile (Table 1), there was a significant difference in the history of falls ($p=0.004$) and medication use ($p=0.001$), showing that there is a greater proportion of elderly women who had a history of falls in the last six months and taking more than two medications.

When analyzing the sociodemographic profile of the elderly according to age (Table 1), there was a significant difference in the proportions for marital status (p=0.010), education (p=0.001) and retirement (p=0.001). This reveals that there is a higher proportion of married elderly people, with complete high school education and who are not retired in the age group between 60 and 69 years old. Regarding the health profile (Table 2), there was also a significant difference in the proportions in the history of falls (p=0.001) and level of physical activity (p=0.001), showing that there is a higher proportion of elderly people who do not have a history of falls in the last six months and physically active in the 60 to 69 age group.

Table 1. Sociodemographic and health profile of the elderly users of primary health care in the city of Maringá, state of Paraná, according to age group

VARIABLES	60 to 69 years (n = 387)	70 to 79 years (n = 197)	80 years old or over (n = 70)	X^2	p
	f (%)	*f* (%)	*f* (%)		
Marital status					
Married	246 (61.3)	114 (28.4)	41 (10.2)	6.573	**0.010***
Single	41 (70.7)	12 (20.7)	5 (8.6)		
Divorced	47 (63.5)	22 (29.7)	5 (6.8)		
Widowed	53 (43.8)	49 (40.5)	19 (15.7)		
Monthly income					
1 to 2 minimum wages	250 (57.7)	133 (30.7)	50 (11.5)	0.442	0.506
2.1 to 3 minimum wages	90 (57.7)	50 (32.1)	16 (10.3)		
Above 3 minimum wages	19 (63.3)	9 (30.0)	2 (6.7)		
Education					
Illiterate	31 (39.2)	34 (43.0)	14 (17.7)	22.454	**0.001***
Incomplete elementary school	161 (57.3)	88 (31.3)	32 (11.4)		
Complete elementary school	86 (58.5)	44 (29.9)	17 (11.6)		
Complete high school	70 (72.9)	22 (22.9)	4 (4.2)		
Higher education	39 (76.5)	9 (17.6)	3 (5.9)		
Race					
White	318 (60.0)	153 (28.9)	59 (11.1)	0.267	0.605
Black	60 (57.1)	36 (34.3)	9 (8.6)		
Others	9 (47.4)	8 (42.1)	2 (10.5)		
Retirement					
Yes	252 (52.0)	168 (34.6)	65 (13.4)	42.144	**0.001***
No	130 (80.2)	28 (17.3)	4 (2.5)		
History of falls					
Yes	51 (48.1)	36 (34.0)	19 (17.9)	9.244	**0.010***
No	334 (61.2)	161 (29.5)	51 (9.3)		
Medication use					
Non	61 (63.5)	24 (25.0)	11 (11.5)	0.004	0.951
1 to 2	163 (57.2)	92 (32.3)	30 (10.5)		
More than 2	161 (60.1)	79 (29.5)	28 (10.4)		
Level of physical activity					
Very active/Active	248 (62.5)	117 (29.5)	32 (8.1)	5.661	**0.017***
Irregularly active	97 (53.9)	55 (30.6)	28 (15.6)		
Sedentary	42 (54.5)	25 (32.5)	10 (13.0)		

* Significant at $p < 0.05$ by Chi-square test.

There was a significant difference in the comparison of the level of physical activity of the elderly according to sex only in minutes of moderate activities per day (p=0.039) and per week (p=0.048), showing that women perform more moderate activities than men. Regarding functionality, there was a significant difference in understanding and communication (p=0.011), mobility (p=0.001), activities of daily living (p=0.004), social participation (p=0.023) and total functionality (p=0.001), which shows that men have better functionality in all these domains.

A significant difference was found when comparing the level of physical activity of the elderly according to the age group (Table 2) only in the minutes of walking per week (p=0.031). This finding shows that the elderly aged 60 to 69 years walk more minutes per week when compared to those aged 80 or more.

Regarding functionality (Table 2), there was a significant difference only for total functionality (p=0.032), demonstrating that the elderly aged 70 to 79 years have better functionality than those of the two other groups.

There was a significant difference in the comparison of the level of physical activity of the elderly due to the history of falls only on the days of moderate activities per week (p=0.040), indicating that those who did not fall in the last six months perform more moderate activities per week. Regarding functionality, there was a difference only in mobility (p=0.018), social participation (p=0.020) and total functionality (p=0.039). This means that the elderly who did not have a history of falls in the last six months demonstrate better total functionality and mobility, while those who suffered falls demonstrate better social participation.

Table 2. Comparison of the level of physical activity and functionality of the elderly users of primary health care in the city of Maringá, state of Paraná, **according to their age group**

VARIABLES	Age group			p
	60 to 69 years (n = 387)	70 to 79 years (n = 197)	80 years old or over (n = 70)	
	Md (Q1;Q3)	Md (Q1;Q3)	Md (Q1;Q3)	
Physical activity				
Walking Days	4.0 (2.0; 6.0)	3.0 (2.0; 6.0)	1.0 (3.0; 5.3)	0.408
Min. Walk per day	60.0 (20.0; 90.0)	40.0 (20.0; 90.0)	30.0 (10.0; 60.0)	0.067
Min. Walk per week	165.0 (60.0; 420.0)[a]	120.0 (40.0; 360.0)	100.0 (10.0; 258.8)	**0.031***
Days of moderate activity	1.0 (0.0; 3.0)	1.0 (0.0; 3.0)	0.0 (0.0; 3.0)	0.305
Min. moderate activity per day	20.0 (0.0; 60.0)	30.0 (0.0; 60.0)	0.0 (0.0; 60.0)	0.355
Min. moderate activity per week	40.0 (0.0; 180.0)	30.0 (0.0; 135.0)	0.0 (0.0; 135.0)	0.418
Days of vigorous activity	0.0 (0.0; 0.0)	0.0 (0.0; 0.0)	0.0 (0.0; 1.0)	0.660
Min. vigorous activity per day	0.0 (0.0; 0.0)	0.0 (0.0; 0.0)	0.0 (0.0; 30.0)	0.715
Min. vigorous activity per week	0.0 (0.0; 0.0)	0.0 (0.0; 0.0)	0.0 (0.0; 30.0)	0.643
Total time of physical activity per week	312.5 (120.0; 780.0)	270.0 (80.0; 735.0)	180.0 (60.0; 727.5)	0.114
Functionality (score)				
Understanding and communication	0.0 (0.0; 2.0)	1.0 (0.0; 2.0)	0.0 (0.0; 1.0)	0.160
Mobility	1.0 (0.0; 3.0)	2.0 (0.0; 3.0)	1.0 (0.0; 3.0)	0.076
Self-care	0.0 (0.0; 0.0)	0.0 (0.0; 0.0)	0.0 (0.0; 0.0)	0.059
Interpersonal relationships	0.0 (0.0; 0.0)	1.0 (0.0; 2.0)	0.0 (0.0; 2.0)	0.881
Activities of daily living	0.0 (0.0; 2.0)	1.0 (0.0; 2.0)	0.0 (0.0; 2.0)	0.293
Social participation	0.0 (0.0; 2.0)	1.0 (0.0; 2.0)	0.0 (0.0; 2.0)	0.128
Full functionality	4.0 (0.0; 9.0)	5.0 (1.0; 10.0)[b]	3.0 (0.0; 7.0)	**0.032***

* Significant difference at $p < 0.05$ by *Kruskal-Wallis* test followed by Mann-Whitney U test: a) 1 with 2 and 3; b) 2 with 1 and 3. Min.: minutes.

There was a significant difference in the comparison of the level of physical activity of the elderly due to the history of near falls (Table 3) only on the days of walking per week (p=0.035) and minutes of walking per week (p=0.046). This finding showed that those who did not have a history of near falls in the last six months perform more light activities per week.

Table 3. Comparison of the level of physical activity and functionality of the elderly users of primary health care in the city of Maringá, state of Paraná, according to the history of near falls.

VARIABLES	History of near falls		p
	Yes (n = 132)	No (n = 522)	
	Md (Q1;Q3)	Md (Q1;Q3)	
Physical activity			
Walking Days	3.0 (2.0; 5.0)	4.0 (2.0; 6.0)	**0.035***
Min. Walk per day	60.0 (20.0; 90.0)	40.0 (20.0; 90.0)	0.208
Min. Walk per week	120.0 (50.0; 300.0)	140.0 (60.0; 420.0)	**0.046***
Days of moderate activity	0.0 (0.0; 2.0)	1.0 (0.0; 3.0)	0.619
Min. moderate activity per day	0.0 (0.0; 60.0)	22.0 (0.0; 60.0)	0.059
Min. moderate activity per week	0.0 (0.0; 120.0)	40.0 (0.0; 180.0)	0.164
Days of vigorous activity	0.0 (0.0; 0.0)	0.0 (0.0; 1.0)	0.085
Min. vigorous activity per day	0.0 (0.0; 0.0)	0.0 (0.0; 13.8)	0.356
Min. vigorous activity per week	0.0 (0.0; 0.0)	0.0 (0.0; 15.0)	0.397
Total time of physical activity per week	285.0 (90.0; 731.5)	290.0 (100.0; 780.0)	0.576
Functionality (score)			
Understanding and communication	1.0 (0.0; 2.0)	0.0 (0.0; 2.0)	0.136
Mobility	2.0 (0.0; 3.0)	1.0 (0.0; 3.0)	**0.024***
Self-care	0.0 (0.0; 0.0)	0.0 (0.0; 0.0)	0.295
Interpersonal relationships	0.0 (0.0; 1.0)	0.0 (0.0; 0.0)	0.557
Activities of daily living	1.0 (0.0; 2.0)	0.0 (0.0; 2.0)	**0.032***
Social participation	1.0 (0.0; 2.0)	0.0 (0.0; 2.0)	**0.048***
Full functionality	6.0 (0.0; 10.0)	4.0 (0.0; 9.0)	**0.029***

* Significant difference at $p < 0.05$ by Mann-Whitney U test.

Min.: minutes.

With respect to functionality (Table 3), a significant difference was detected only in mobility (p=0.024), activities of daily living (p=0.032), social participation (p=0.048) and total functionality (p=0.029), demonstrating that the elderly who did not have a history of almost falls in the last semester demonstrate better functionality.

There was a significant difference in the comparison of the functionality of the elderly according to the level of physical activity (Table 4) only in the domain of personal participation (p=0.001). This result shows that the physically active elderly have more difficulty in participating in social and community activities than those irregularly active and sedentary.

Table 4. Comparison of the functionality of the elderly users of primary health care in the city of Maringá, state of Paraná, according to the level of physical activity

Variables	Level of physical activity			p
	Very active/active (n = 397)	Irregularly active (n = 180)	Sedentary (n = 77)	
	Md (Q1;Q3)	Md (Q1;Q3)	Md (Q1;Q3)	
Understanding and communication	0.0 (0.0; 2.0)	0.0 (0.0; 2.0)	0.0 (0.0; 2.0)	0.596
Mobility	2.0 (0.0; 3.0)	1.0 (0.0; 3.0)	2.0 (0.0; 3.0)	0.098
Self-care	0.0 (0.0; 0.0)	0.0 (0.0; 0.0)	0.0 (0.0; 0.0)	0.173
Interpersonal relationships	0.0 (0.0; 1.0)	0.0 (0.0; 1.0)	0.0 (0.0; 1.0)	0.079
Activities of daily living	1.0 (0.0; 2.0)	0.0 (0.0; 2.0)	0.0 (0.0; 2.0)	0.240
Social participation	1.0 (0.0; 2.0)[a]	0.0 (0.0; 1.8)	0.0 (0.0; 2.0)	**0.001***
Full functionality	5.0 (0.0; 9.0)	3.0 (0.0; 9.8)	4.0 (0.0; 11.0)	0.083

* Significant difference at $p < 0.05$ by *Kruskal-Wallis* test between: a) 1 with 2 and 3.

DISCUSSION

The main results of the present study refer to the longer duration of moderate physical activity by women, but better functionality among men from Maringá. Elderly people who have not experienced falls or near falls in the past six months perform more moderate or light activities per week, respectively. Finally, the physically active have more difficulty in participating in social and community activities than those irregularly active and sedentary.

As far as is known, this study brings unprecedented results with regard to the history of near falls. People who reported not having such a history walk more days a week and have better mobility functionality. In addition, the study differs from what has already been published in the literature[23], as it demonstrated that older elderly people (70 to 79 years old) have better global functionality, that is, less disability and difficulties than younger people (60 to 69 years). This can be justified by the biopsychosocial differences of aging and also, in this case, cultural and environmental differences, since the research was carried out in four major regions of the municipality.

When observing physical activity and functionality according to sex, it was found that women perform more moderate-intensity physical activities than men, a fact that may be related to their greater concern for health throughout life and, especially, in old age[24]. Similar results were also found in a study in Piauí and São Paulo, states in Brazil, in which elderly women had higher frequencies of physical activity - 67.4% and 83% respectively[25,26]. This finding may be justified in the culture of women in practicing more domestic activities than men. However, it is necessary to encourage physical activity in both sexes[27]. Similarly, in the work by Siqueira et al.[28], carried out in BHUs in municipalities in the south and northeast of Brazil, the low level of physical activity was significantly more frequent among elderly men compared to women.

In Basic Health Units, physical activity programs should be implemented and/or reinforced as a way to guarantee health promotion in aging[26]. However, when analyzing the sociodemographic profile in relation to sex, it was evident that women are younger than men, a fact that may also explain the present finding.

Even though they are physically more active, women have worse functionality in understanding and communication, mobility, activities of daily living, social participation and total functionality when compared to men. It is worth remembering

that women who are not retired and who still work are the majority, compared to men, a fact that may be related to the difficulty in carrying out the activities listed above in the last month. This result is in line with Alexandre et al.[29], who reported that men had a lower density of incidence of functional disability.

Almazán Isla et al.[30], in a study developed in Spain, show that the prevalence of severe/extreme disability among women was considerably higher than among men. This is because the elderly tend to have more chronic diseases and greater social vulnerability and, consequently, a higher density of incidence of disability in instrumental activities of daily living[1].

Maintaining the functional capacity of the elderly is one of the factors that contribute to a better quality of life for this population. In this sense, the practice of physical activities is an important means to achieve this goal, and should be encouraged throughout life[31]. Public policies that reinforce this aspect of functionality should be aligned with the reality of long-lived people[32].

As for the age group (Table 2), it was evidenced that the youngest elderly (60 to 69 years old) walk more minutes per week when compared to those aged 80 years old or over. The advance of age generates musculoskeletal changes that can affect mobility, decreasing gait capacity and fitness. In old age, there is usually a progressive decrease in mass and, especially, in the rate of development of muscle strength, which impairs physical mobility and can trigger a loss process compatible with functional disability[33]. In addition, slow gait among these people is related to the high frequency of falls[34]. Another factor that can justify these results is that younger elderly are more physically active, when compared to older ones (Table 1).

However, the increase in age supposedly was not an impacting factor on the functionality of the people surveyed, as we observed that the middle age group (from 70 to 79 years old) has less difficulty than the others. The hypothesis is that the disability process is dynamic, not static, in which several factors, and not just age, play a role in the beginning, recovery or worsening of the elderly's disability status[35].

Participating in social groups[36,37] promotes independence, but institutionalization[38], living in poor environments[39] and referring to health as regular or bad[40] increase the disability of the elderly. In this sense, it is possible to mention the regional culture, the environment and the region in which they live as factors that influence the functionality of the elderly. Jenkins[41], for example, found that the association between physical activity and the onset of disability only lost significance when health conditions such as symptoms and functional limitation were added to the model analyzed.

On the other hand, other authors[42] report that a wide range of clinical characteristics, social life and other circumstances contribute positively or negatively to mortality and functional deterioration in the elderly, even when comparing the older age groups with the younger group. A longitudinal study, carried out by Stineman et al.[43], with 9,447 elderly people aged 70 and over in the United States showed that it is essential to recognize that the subpopulations of elderly people living in the community can still exhibit functional resilience and potential for improvement, when compared with the youngest. According to the authors, this recognition supports future efforts to develop and test interventions to maintain and seek functional improvements, even among older populations.

It was observed that the elderly who have not suffered falls in the last six months perform more moderate activities per week, as well as having better total functionality and mobility. However, these (without a history of falls) are the youngest (60 to 69 years old), as shown in Table 1. In this sense, it is exposed that physical activity seems to be an intervention that can prevent falls in the elderly living in the community, even more so when these programs defy balance[44].

An interesting and controversial data was found: paradoxically, it was noticed that the elderly

who suffered falls in the last semester had significantly less difficulties in social participation. Coupled with this information, the hypothesis arises that they are looking to get involved in society and community activities in order to overcome the fear of new falls, even though this issue has not been evaluated in the present study. Nevertheless, not all elderly people who have suffered falls avoid activities in daily life. The fear of falling generates a series of consequences, greater caution when performing activities, which can be protective against falls, rather than complete restriction, which could be devastating[45]. According to Choi, Jeon and Cho[46], there is no general consensus regarding the fear of falling and the decrease in social interaction. As noted by Antes et al.[46], although more prevalent in physically inactive elderly, fear of falling is also present among those who practice physical activity, whether social or not.

The elderly who did not have a history of near falls (Table 3) in the last six months perform more light activities per week (walking), as well as have better functionality in mobility, in activities of daily living, social participation and in total functionality. In addition, an inversely proportional and weak relationship between the practice of physical activity and functionality was identified, revealing that the more the elderly practice physical activity, the better their functionality becomes. A physical exercise program aimed at preventing falls improved the functional performance of the elderly and positively altered the gait variables[48].

Another interesting fact (Table 4) was that physically active elderly people have more difficulty in participating in social and community activities than those who are irregularly active and sedentary. A recent systematic review and meta-analysis of randomized controlled trials that compared the effects of an exercise intervention with the usual care and participation in vital roles in the elderly concluded that interventions with exercise (increased level of physical activity) do not improve participation in roles of life in older adults.

The results did not support the implicit assumption that exercise-based interventions associated with improved function/activity also lead to better participation[49]. Another hypothesis to be raised is that the elderly who are more physically active have less time to dedicate to social and community activities and relate this as a difficulty. Several other studies on physical activity and functionality have been conducted in Brazil and in the world, but the use of instruments and cutoff points different from those used herein makes it impossible to compare these studies[50,51].

Some limitations of the present study should be considered. Initially, care should be taken to extrapolate the findings to the general population, since the sample is composed of individuals living in areas covered by HBUs in a single municipality, which does not imply generalizations for all Brazilian elderly. Finally, the fact that it is a cross-sectional study prevents the assessment of direct causal relationships between the variables studied. Further research is suggested in other municipalities in the country with elderly users of BHUs, as well as with those who do not use these services, in order to compare the results.

CONCLUSION

It can be concluded that sociodemographic (such as sex and age group) and health (history of falls, for example) factors are interfering with the duration and frequency of physical activity of the elderly, as well as in their functionality. It is noteworthy that women and younger elderly perform more physical activity, while men and those aged 70 to 79 years have better functionality. Those with no history of falls perform more moderate activities per week, in addition to better functionality. In turn, those who are physically active have more difficulty in participating in social and community activities.

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