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PROFILE OF ELDERLY USERS OF OUTDOOR GYMS FOR AGED PEOPLE

Perfil dos idosos usuários das academias ao ar livre para a terceira idade

Perfil de ancianos usuarios de gimnasios al aire libre para la tercera edad

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ABSTRACT

Objective: To describe the profile of elderly users of the outdoor gyms in the city of Fortaleza, Ceará. **Methods:** Descriptive cross-sectional study, comprising a sample of 374 elderly subjects aged 60 years or above, conducted between October 2015 and April 2016, in the outdoor gyms in the city of Fortaleza, Ceará. A questionnaire was applied with questions addressing sociodemographic data, self-related clinical conditions, lifestyle and the use of workout equipment. Weight and height were measured in order to obtain the body mass index (BMI). **Results:** A majority of the interviewed subjects were women (56.7%, n=212) and 60 to 69 years old (66.8%, n=250). The main self-related conditions were hypertension (40.9%, n=153), high cholesterol (32.4%, n=121) and osteoarthritis (26.2%, n=98). Among the life habits, alcohol consumption (31.6%, n=118) was the most reported one. It was found that 42.8% (n=160) were overweight. A majority had been using the workout equipment for at least a year (68.2%, n=255), exercising up to 30 minutes a day (49.5%, n=185), five or more days a week (51%, n=191) and most of them had perceived health improvement (93.6%, n=350). **Conclusion:** The elderly presented a young and active profile, whose most prevalent health conditions can be easily managed with regular physical activity practice, and showed similar characteristics regardless of the economic context in which they are inserted.

Descriptors: Health of the Elderly; Health Promotion; Health Services.

RESUMO

Objetivo: *Descrever o perfil dos idosos usuários das academias ao ar livre para a terceira idade de Fortaleza (Ceará).* ***Métodos:*** *Estudo transversal, envolvendo uma amostra de 374 idosos com idade maior ou igual a 60 anos, realizado entre os meses de outubro de 2015 e abril de 2016, nas academias ao ar livre para a terceira idade em Fortaleza, Ceará. Aplicou-se um questionário contendo questões sobre dados sociodemográficos, condições de saúde e hábitos de vida autorrelatados, e sobre a utilização dos equipamentos. Mensurou-se o peso e a altura para a obtenção do índice de massa corporal (IMC).* ***Resultados:*** *A maioria dos entrevistados era mulher (56,7%, n=212) e com faixa etária entre 60 e 69 anos (66,8%, n=250). As principais condições de saúde autorrelatadas foram hipertensão (40,9%, n=153), colesterol alto (32,4%, n=121) e osteoartrite (26,2%, n=98). Entre os hábitos de vida, o consumo de bebida alcoólica (31,6%, n=118) foi o mais relatado. Verificou-se que 42,8% (n=160) encontrava-se com excesso de peso. A maioria utilizava os equipamentos há mais de um ano (68,2%, n=255), até 30 minutos por dia (49,5%, n=185), cinco ou mais dias durante a semana (51%, n=191), tendo em grande parte percebido melhora na saúde (93,6%, n=350).* ***Conclusão:*** *Os idosos apresentaram um perfil jovem e ativo, cujas condições de saúde de maior prevalência podem ser facilmente manejadas com a prática de atividade física, e apresentam características semelhantes independentemente da situação econômica em que se encontram inseridos.*

Descritores: *Saúde do Idoso; Promoção da Saúde; Serviços de Saúde.*

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RESUMEN

Objetivo: Describir el perfil de ancianos usuarios de gimnasios al aire libre para la tercera edad de Fortaleza (Ceará). Métodos: Estudio transversal con una muestra de 374 ancianos de 60 años o más, entre los meses de octubre de 2105 y abril de 2016, en los gimnasios al aire libre para la tercera edad de Fortaleza, Ceará. Se aplicó un cuestionario con preguntas sobre los datos socio demográficos, las condiciones de salud y los hábitos de vida auto relatados y sobre la utilización de los equipos. Se mensuró el peso y la altura para el cálculo del Índice de Masa Corporal (IMC). Resultados: La mayoría de los entrevistados eran mujeres (56,7%, n=212) en la franja de edad entre 60 y 69 años (66,8%, n=250). Las principales condiciones de salud auto relatadas fueron la hipertensión (40,9%, n=153), el colesterol elevado (32,4%, n=121) y la osteoartritis (26,2%, n=98). Entre los hábitos de vida, el consumo de bebida alcohólica (31,6%, n=118) ha sido el más relatado. Se verificó que el 42,8% (n=160) tenía exceso de peso. La mayoría utilizaba los equipos hacía más de un año (68,2%, n=255), hasta 30 minutos al día (49,5%, n=185), cinco o más días a la semana (51%, n=191) y gran parte ha percibido mejora de la salud (93,6%, n=350). Conclusión: Los ancianos presentaron un perfil joven y activo cuyas condiciones de salud más prevalentes pueden ser manejadas con la práctica de actividad física y presentan características que no dependen de la situación económica que tienen.

Descriptores: *Salud del Anciano; Promoción de la Salud; Servicios de Salud.*

INTRODUCTION

Brazil is experiencing an intense transition process marked by the growth of the older population. The Brazilian older population, which in the year 2000 comprised 14.2 million individuals, increased to 19.6 million in 2010, and projections show that this figure should reach 41.5 million by 2030[1]. The growth of this population poses important challenges for Brazil's National Health System, also known as the Unified Health System (*Sistema Único de Saúde – SUS*), mainly due to a prolonged epidemiological transition in which risk factors for non-communicable diseases are on the rise[2].

Regular physical activity plays an important role in the control and prevention of non-communicable diseases in old age as it improves mobility, functional capacity and quality of life[3]. The adoption of an active lifestyle, especially if associated with healthy eating habits, contributes to a healthy and quality aging. However, although the benefits of physical activity are clear, people are becoming less active as they grow older[4].

Physical inactivity is reportedly responsible for 6% of cardiovascular diseases, 7% of type 2 diabetes, 10% of breast cancers, 10% of colon cancers and 9% of premature deaths worldwide[5]. Thus, investing in actions to promote physical activity as a public policy is fundamental given that physical inactivity is identified as an important risk factor for noncommunicable diseases. According to 2010 VIGITEL data, available in DATASUS, 40.5% of the inhabitants of the city of Fortaleza aged 65 years or older were physically inactive.

Parks and squares are ideal environments for practicing physical activity as they are easily accessible by citizens. Practicing physical activity in these places can facilitate the gain of physical and psychological health benefits; additionally, these places are also associated with a good level of physical activity[6].

In this context, several outdoor gyms for aged people have been implemented in the parks and squares of Fortaleza. These gyms are equipped with machines designed to stretch, strengthen and develop the muscles and build older people's aerobic capacity. However, the profile of the older people who use the equipment of these gyms is still unknown. It should be noted that this program is an important strategy for promoting health and preventing noncommunicable diseases. Therefore, investigating the profile of the older people who use these gyms is an important means of getting to know the population group served by this initiative. This can contribute to the development of strategies within the project as well as other models of public policies for physical activity.

Thus, the present study aimed to describe the profile of older users of the outdoor gyms in the city of Fortaleza, Ceará.

METHODS

This is a quantitative cross-sectional study carried out in outdoor gyms for aged people which are installed and operating in public places in the city of Fortaleza, Ceará.

The city has several outdoor gyms in operation. The study included the first eleven gyms implemented due to operational convenience and with the purpose of guaranteeing the representativeness of gyms from different neighborhoods. These gyms represent neighborhoods of different socioeconomic status, with average personal incomes ranging from R$ 341.36 to R$ 3,488.25.

The study population consisted of older people aged 60 and over, regardless of gender, who used the gym equipment for at least one month. Individuals with reasoning or communication problems and those accompanied by caregivers or family members who confirmed the existence of a medical diagnosis of such conditions were excluded from the study.

Interviews were carried out with 374 individuals. The sample size was calculated using the StatCalc, a component of Epi Info 7.1.5.0. The population corresponds to the total number of older people who live in the neighborhoods where the gyms chosen for the study are located. The information were obtained from the 2010 Census available on a secondary database. A 95% confidence interval was expected for an estimated prevalence of 50% of older users there was no information on this prevalence in this specific group. The sample was divided into two groups based on the average income of the neighborhoods where the gyms were located: "G1" is the group that used the equipment implemented in high-income neighborhoods and "G2" is the group that used the equipment located in low-income neighborhoods.

Data were collected between October 2015 and April 2016 from Monday to Friday from 5:00 am to 10:00 am and from 4:00 pm to 9:00 pm. These periods are identified as those with the highest frequency of older people that make up the target population. The individuals were approached by the researcher in a casual manner considering the easy access to each person.

A standardized questionnaire composed of three distinct sections was administered. The first section presented questions addressing sociodemographic characteristics (gender, age, ethnicity, marital status, education, professional activity, and retirement). The second section contained questions about self-reported health conditions (hypertension, diabetes mellitus, high cholesterol, asthma, cardiopathy, osteoarthritis, osteoporosis, occurrence of falls, smoking, and drinking). The third section investigated the use of the equipment (length of use, daily length of use, weekly frequency, satisfaction with the quality of the equipment, perception of safety, additional practice of exercises, company during exercise, family support, and perception of health improvement).

An Oxer digital scale and a Sanny portable stadiometer were used to measure the participants' weight and height. These measures were used later in the calculation of the body mass index (BMI) by dividing the participant's weight by the height square. BMI was classified based on the criteria proposed by Lipschitz[7], which takes into account the changes in body composition that occur as a result of the aging process.

The data were processed in the SPSS version 23.0. Bivariate descriptive statistics was used and it included frequency distribution of the different categories discriminated according to the average income of the neighborhood. Pearson's Chi-squared test ($\chi 2$) was used with a significance level of 5% ($p<0.05$) to check for potential statistically significant differences between the groups. Quality control was performed in order to reduce the occurrence of errors. All the questionnaires were revised before double data entry into the statistical software.

The study was submitted to the Research Ethics Committee of the Federal University of Ceará (*Universidade Federal do Ceará*) and was approved under Approval No. 1.320.650. The study complied with all the ethical precepts established by Resolution 466/12 of the National Health Council, which regulates the ethical and legal aspects of research involving human beings.

RESULTS

Participants were 374 older people whose mean age was 67.59 (± 6.29) years. The oldest participant was 89 years old. The sociodemographic profile of the sample is characterized by a majority of: women (56.7%, n=212); individuals aged 60 to 69 years (66.8%, n=250); white individuals (66%, n=247); and married individuals (61%, n=228). These data are shown in table I.

Table I - Description of the sociodemographic profile of elderly users of outdoor gyms for aged people by average income of neighborhoods. Fortaleza, Ceará, 2015-2016.

Variable	G1		G2		Total		p-value
	n (188)	%	n (186)	%	n	%	
Gender							0.906
Men	82	43.6	80	43	162	43.3	
Women	106	56.4	106	57	212	56.7	
Age group							0.290
60 to 69	122	64.9	128	68.8	250	66.8	
70 to 79	52	27.7	51	27.4	103	27.6	
80 or older	14	7.4	7	3.8	21	5.6	
Ethnicity							0.001*
White	134	71.3	113	60.8	247	66	
Black	8	4.3	29	15.6	37	9.9	
Other	46	24.4	44	23.6	90	24.1	
Marital status							0.701
Married	112	59.6	116	62.4	228	61	
Single	32	17	27	14.5	59	15.8	
Divorced	16	8.5	20	10.7	36	9.6	
Widowed	28	14.9	23	12.4	51	13.6	
Education							0.000*
Incomplete primary	8	4.3	8	4.3	16	4.3	
Complete primary	10	5.3	34	18.3	44	11.8	
Incomplete secondary	18	9.6	22	11.8	40	10.7	
Complete secondary	70	37.2	74	39.8	144	38.5	
Complete higher education	82	43.6	48	25.8	130	34.7	
Still working							0.879
Yes	60	31.9	58	31.2	118	31.6	
No	128	68.1	128	68.8	256	68.4	
Retirement							0.097
Yes	152	80.9	137	73.7	289	77.3	
No	36	19.1	49	26.3	85	22.7	

G1: Highest average income; G2: Lowest average income; *statistical difference for $p<0.05$.

With regard to education, more than a third of the participants had complete secondary education (38.5%, n=144) and complete higher education (34.7%, n=130). A total of 31.6% (n=118) of the participants were still working. Most of the individuals were retirees or pensioners (77.3%, n=289).

The most frequent self-reported health conditions were arterial hypertension (40.9%, n=153), high cholesterol (32.4%, n=121), drinking (31.6%, n=118) and osteoarthritis (26.2%, n=98) (Table II).

Table II - Description of the self-reported health conditions of elderly uses of outdoor gyms for aged people by average income of neighborhoods. Fortaleza, Ceará, 2015-2016.

Variable	G1		G2		Total		p-value
	n (188)	%	n (186)	%	n	%	
Hypertension							0.411
Yes	73	38.8	80	43	153	40.9	
No	115	61.2	106	57	221	59.1	
Diabetes mellitus							0.497
Yes	24	12.8	19	10.2	43	11.5	
No	164	87.2	167	89.8	331	88.5	
High cholesterol							0.001*
Yes	46	24.5	75	40.3	121	32.4	
No	142	75.5	111	59.7	253	67.6	
Asthma							0.349
Yes	4	2.1	7	3.8	11	2.9	
No	184	97.9	179	96.2	363	97.1	
Cardiopathy							0.345
Yes	14	7.4	19	10.2	33	8.8	
No	174	92.6	167	89.8	341	91.2	
Osteoarthritis							0.443
Yes	46	24.5	52	28	98	26.2	
No	142	75.5	134	72	276	73.8	
Osteoporosis							0.571
Yes	27	14.4	23	12.4	50	13.4	
No	161	85.6	163	87.6	324	86.6	
Falls (in the past year)							0.850
Yes	27	14.4	28	15.1	55	14.7	
No	161	85.6	158	84.9	319	85.3	
Smoking							0.349
Yes	4	2.1	7	3.8	11	2.9	
No	184	97.9	179	96.2	363	97.1	
Drinking							0.550
Yes	62	33	56	30.1	118	31.6	
No	126	67	130	69.9	256	68.4	

G1: Highest average income; G2: Lowest average income; *statistical difference for $p<0.05$.

BMI revealed that 7.5% (n=28) of the participants were underweight, 49.7% (n=186) were normal weight, and 42.8% (n=160) presented excess weight (Table III).

Table III - Description of the anthropometric profile of users of outdoor gyms for aged people by average income of neighborhoods. Fortaleza, Ceará, 2015-2016.

Variable	G1			G2			Total			p-value
	n (188)	%	Mean	n (186)	%	Mean	N	%	Mean	
Weight (kg)			68.95			69.78			69.36	
Height (m)			1.60			1.60			1.60	
BMI			26.56			26.91			26.73	
Underweight	11	5.9		17	9.1		28	7.5		
Normal	101	53.7		85	45.7		186	49.7		0.217
Excess weight	76	40.4		84	45.2		160	42.8		

G1: Highest average income; G2: Lowest average income.

In all, 68.2% (n=255) of the participants had used the gym for more than one year and 51% (n=191) attended the gym at least 5 days a week. Satisfaction with the quantity of gym machines was reported by 73% (n=273) of the participants and satisfaction with the quality of the equipment was reported by 62.8% (n=235) of the interviewees. A total of 93.6% (n=350) of the participants reported health improvements due to gym use (Table IV).

There were statistically significant differences in ethnicity (p=0.001), education (p=0.000) and high cholesterol (p=0.001) between groups.

Table IV - Description of the profile of use patterns and perceptions of users of outdoor gyms for aged people by average income of neighborhoods. Fortaleza, Ceará, 2015-2016.

Variable	G1		G2		Total		p-value
	n (188)	%	n (186)	%	n	%	
Lenght of use							0.214
One to four months	38	20.2	36	19.3	74	19.8	
Five to eight months	13	6.9	24	12.9	37	9.9	
Nine months too one year	3	1.6	5	2.7	8	2.1	
More than one year	134	71.3	121	65.1	255	68.2	
Daily amount of time							0.208
Up to 30 minutes	91	48.4	94	50.5	185	49.5	
30 minutes to 1 hour	78	41.5	64	34.4	142	38	
More than 1 hour	19	10.1	28	15.1	47	12.5	
Weekly frequency							0.331
Less than 3 days	21	11.2	17	9.1	38	10.2	
3 or 4 days	66	35.1	79	42.5	145	38.8	
5 days or more	101	53.7	90	48.4	191	51	
Use on the weekends							0.086
Yes	66	35.1	50	26.9	116	31	
No	122	64.9	136	73.1	258	69	
Satisfaction with the quantity of machines							0.452
Yes	134	71.3	139	74.7	273	73	
No	54	28.7	47	25.3	101	27	
Satisfaction with the quality of machines							0.407
Yes	122	64.9	113	60.8	235	62.8	
No	66	35.1	73	39.2	139	37.2	
Perception of safety							0.313
Yes	136	72.3	143	76.9	279	74.6	
No	52	27.7	43	23.1	95	25.4	
Walking							0.128
Yes	126	67	138	74.2	264	70.6	
No	62	33	48	25.8	110	29.4	
Company during physical activity							0.887
Yes	122	64.9	122	65.6	244	65.2	
No	66	35.1	64	34.4	130	34.8	
Family support							0.490
Yes	121	64.4	126	67.7	247	66	
No	67	35.6	60	32.3	127	34	
Self-perceived health improvement							0.978
Yes	176	93.6	174	93.5	350	93.6	
No	12	6.4	12	6.5	24	6.4	

G1: Highest average income; G2: Lowest average income.

DISCUSSION

Most of the participants in the present study were women. This finding is in line with the findings of other studies which have reported that 75% and 53.8% of users of outdoor gyms were women[8-9]. The majority of the individuals who used the gyms were 60 to 69 years old, which may be explained by the decline in physical activity with advancing age[10].

The low frequency of black individuals in the high-income group may have determined the statistical difference found between groups. It is important to mention that ethnic minorities present a higher prevalence of physical inactivity compared to white individuals[11]. The proportion of married older people found is in agreement with that found in another research[9] and may be explained by a greater involvement in leisure activity among individuals who have a spouse compared to those who do not[12].

Higher levels of education double the likelihood of older people's participation in exercise[13]. Most of the interviewees in both groups had a high level of education. The difference found between the groups for this variable can be explained by the higher proportion of individuals with higher education in the high-income group, which highlights the association between economic status and level of education. Most of the interviewees did not work and many were retired. Considering

that retirement is a determinant of involvement in physical activity[14], it is important to take advantage of this opportunity to encourage the maintenance/adoption of an active lifestyle within the context of outdoor gyms.

The sociodemographic profile of the participants points to the need for strategies to encourage the adherence to and maintenance of physical activity in the gyms by the oldest-old, non-white, unmarried and less educated people due to the low presence of these groups. In addition, interventions are needed to increase the level of physical activity among individuals who are still working and to encourage the adoption of an active lifestyle by retirees or pensioners.

Arterial hypertension was the most prevalent clinical condition in the study sample. Research has identified a prevalence of 40.2% of hypertension in physically active older adults[15], a proportion that is similar to that observed in the present study. The second most prevalent clinical condition in the sample was high cholesterol, with a prevalence rate close to that found in another study in which 32.7% of physically active older adults presented hypercholesterolemia[16]. Also, a statistically significant difference between the groups was found and this condition was more prevalent in the low-income group.

Drinking was reported by nearly three-thirds of the sample. This proportion is higher than those found in two studies in which drinking prevalence rates were 19.9% and 14.4%, respectively[17,18]. Given its psychosocial impact and because it is considered a risk factor for cardiovascular diseases, diabetes, liver diseases, and other diseases[19], health education activities addressing the issue should be carried out with the people who use the gym equipment. Osteoarthritis, another important clinical condition, was reported by a quarter of the interviewees. Individuals with arthritis have increased mortality risk related to cardiovascular events[20]. Thus, this condition should be monitored in the gym users to enhance the cardiovascular effects of exercise on this condition[7].

Although the other clinical conditions occurred in smaller proportions, they should not be neglected. The occurrence of asthma in the older population has become an emerging concern due to the substantial epidemiological burden associated with this condition[21]. Cardiovascular diseases are in turn the main causes of death in individuals of both genders[22]. The occurrence of falls is one of the main causes of morbidity and mortality in the older population[23]. All these conditions can be treated/prevented through regular physical activity.

More than a third of the interviewees in the present study presented excess weight. This finding deserves attention because excess weight causes health problems at all ages and increases the risk of chronic and degenerative problems.

Thus, it is necessary to monitor the clinical profile of these older people periodically in order to improve such conditions and the quality of life of the gym users through adequate physical activity.

The city of Fortaleza has several outdoor gyms implemented and operating in public places in several neighborhoods. Some of these gyms have been implemented by the local government alone and others have been implemented by the local government in partnership with private corporations. The gyms are aimed at encouraging people to engage in outdoor physical activity and adopt healthy habits.

The majority of the participants in the present study had used the gym for more than one year. In another study, 47.6% of the participants reported they had been using the gyms for more than a year too[9].

Almost half of the participants in the present study used the equipment for up to 30 minutes and more than half attended the gym on average 5 days or more a week. The American College of Sports Medicine (ACSM) recommends 30 minutes of moderate physical activity at least 5 days a week – a total of 150 minutes of physical activity per week. The same is also recommended by other organizations such as the American Heart Association (AHA) and the World Health Organization (WHO)[24,25]. The users have followed the main recommendations of physical activity with regard to the weekly frequency; however, they have not followed the minimum daily recommendation. Less than a third of the participants used the equipment on the weekends, a proportion that is smaller than that found in another study[9].

Most of the interviewees reported being satisfied with the quantity and quality of the machines available. However, dissatisfaction with the equipment reported by some interviewees should be highlighted because the equipment maintenance is found to influence the levels of physical activity[26].

Fortaleza is a city with a high crime rate. In 2015, the rate of intentional lethal and violent crimes in the capital of Ceará was 63.9 per 100 thousand inhabitants[27]. Despite this, most of the participants reported feeling safe in the places where the gyms are located, indicating satisfaction with public safety in these places.

Walking was a common activity among the majority of the older people interviewed. Research has pointed out walking as the most common type of leisure activity among older adults, with prevalence rates of 87.7% among men and 63% among women[28]. Another study found a leisure-time walking prevalence rate of 20.2% among older adults in São Paulo, Brazil[29].

A little more than a third of the older people who participated in the present study exercised in the company of someone else. Another study found that 37.5% of the attendees of outdoor gyms used the equipment in the company of someone else[9]. Exercising in the company of someone else, as well as the presence of other older people in the places where the gyms are located, can contribute to the reduction of depressive symptoms. Depression is a disorder related to several factors, such as sadness, loneliness and social isolation. In this context, physical activity can be quite important for the improvement of well-being, social contact and quality of life of older adults[30]. It should also be noted that family support is an important motivational factor for involvement in physical activity[31]. Almost two-thirds of the interviewees received support from their

families, a proportion slightly higher than that found in another study in which 58.6% of the participants received some family social support[9].

Health improvement due to the use of the gym equipment was reported by the majority of the older people in the study. This improvement was also reported by most of the participants of two other studies[9,32]. It is possible, therefore, to observe the influence of physical activity on the self-perceived health of the users of the gym equipment, contributing significantly to improving the quality of life and the health of these individuals.

The patterns of use of the gyms show that the adequate maintenance of the equipment is an important factor that can keep the users involved in physical activity. In addition, it can also encourage the involvement of other older people, guaranteeing safety and guidance on the execution of the exercises.

One limitation of this study is the reduced number of other studies that describe the profile of older adults who use outdoor gym equipment for comparison purposes. For that reason, studies carried out with the general population were used for comparisons, particularly the ones related to clinical conditions. Also, the study used self-reported information that may be biased since the necessary evaluations were not performed.

CONCLUSION

The older people who use outdoor gyms are young-old and active. Their most prevalent health conditions can be easily managed through regular physical activity. The few statistical differences found between the groups that use gyms located in places of distinct economic statuses indicate that the gyms have reached the target population evenly regardless of the economic status of the neighborhood in which they are located.

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