



## **Anthropometric profile, general perception of health and types of physical exercise practiced by the elderly in gyms in Rio Branco, Acre**

### **Perfil antropométrico, percepção geral de saúde e tipos de exercícios físicos praticados por idosos em academias de Rio Branco, Acre**

10.56238/isevmjv3n1-009

Receipt of originals: 11/01/2024

Publication acceptance: 02/02/2024

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#### **ABSTRACT**

**Introduction:** The aging of the population globally points to important medical and socioeconomic challenges, where the preservation of this process is important for a healthier life of people who reach the best age. With the impact of aging on the elderly themselves, it is possible to perceive some biological, physical, psychological and social changes, which can trigger various problems such as falls, chronic non-communicable diseases - NCDs, nutritional alterations and functional disabilities. Evidence shows an increase in the practice of physical exercise by the elderly, where they are increasingly in search of a healthier and more active life. **Objective:** The present study aimed to identify the anthropometric profile, self-perception of health and types of physical exercises practiced by elderly people in gyms in Rio Branco Acre. **Results:** The sample consisted of 83 elderly people, 74.70% were female and 25.30% were male, the mean age in years was  $67.20 \pm (6.12)$ , the mean body weight was  $69.50 \pm (11.99)$  kg, the mean height was  $1.60 \pm (0.09)$  cm and the body mass index - BMI was  $27.00 \pm (4.44)$ . The prevalence of individuals with normal weight was 47.00% and overweight was 27.70%, regarding health status, the prevalence was 48.20 for good health and 30.10% for regular health, while the prevalence for medication use was 88.00% and for medical recommendation for physical exercise was 53.00%. The prevalences of the main modalities reported by the interviewees were weight training with 33.70% and water aerobics with 19.30%, and the prevalence of practice time from 30 to 60 minutes was 69.90%, and for weekly frequency of physical exercise practice of 3 and 5 times a week it was 34.90 and 42.20%, respectively. **Conclusion:** In this study, it is concluded that almost half of the interviewees are classified as normal weight, but almost all of the other half of the group is overweight and obese. For the

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general state of health, it was identified that almost 88% of the interviewees use some type of medication, that is, they already have some disease, the medical recommendation for the practice of physical exercises was decisive for more than half of the participants and the main types of exercises practiced were weight training and water aerobics.

**Keywords:** Elderly, Physical activity, Sedentary lifestyle, Health/disease.

## INTRODUCTION

The aging of the population globally points to important medical and socioeconomic challenges, where the preservation of this process is important for a healthier life of people who reach the best age. The preservation of intrinsic capacity, defined as the improvement of the physical and mental capacities of this population, results in functional independence in daily activities and physical performance, increasing the quality of life and health of the elderly (Valenzuela *et al.*, 2023).

The life expectancy of the population is growing and, consequently, the percentage of elderly people is also growing, where this public is more engaged and informed of the benefits of physical exercise (Pereira, 2017).

As the aging process occurs, the levels of sick people increase, due to the susceptibility of the population as a natural result of this process. With the reduction of strength and muscle mass, especially in the elderly, consequently the process of sarcopenia, makes them more prone to the appearance of diseases such as high blood pressure, diabetes and osteoporosis, and as a consequence of muscle attenuation, the imbalance increases, leaving them more susceptible to falls (Koo; Moon, 2022).

With advancing age, aging has a direct impact on the individual, evidencing biological, physical, psychological and social changes. These changes can trigger a variety of problems, including chronic non-communicable diseases (NCDs), nutritional modifications, and functional disabilities (Brito; Mark; Olinda, 2016).

There is evidence of the increase in the practice of physical exercise by the elderly, they are increasingly looking for a healthier and more active life. Water aerobics, among other physical activities, is one of the most requested and well highlighted by the elderly (Belloni *et al.*, 2008) as well as the acceptance of the practice of bodybuilding, as it triggers an increase in the levels of muscle strength, being very interesting for this population (Rabbit *et al.*, 2014).

The beneficial effects of regular physical exercise are evident in the elderly, considering that most elderly people who start practicing some physical activity meet new people, thus



increasing the level of socialization, improving life expectancy, modifying bad lifestyle habits, resulting in a higher quality of life and health in general (Oliveira; Vineyards; Rabello, 2020). Therefore, the objective of this study is to identify the anthropometric profile, self-perception of health and types of physical exercises practiced by the elderly in gyms in Rio Branco, Acre.

## METHOD

This is a descriptive cross-sectional epidemiological study, carried out by intentional sampling, with 83 elderly practitioners of physical exercise in 9 gyms in the municipality of Rio Branco, capital of the state of Acre, aged 60 years or older. The objective of this study was to identify the anthropometric profile, health perception, and types of physical exercises practiced by the elderly in gyms. All those who practiced physical exercise at least 2 times a week, who were or were not accompanied in the activities by professionals in the area of physical education, were excluded, the elderly who did not have the autonomy to fill out the questionnaire and, when accompanied by tutors, refused to complete the research.

For data collection, the International Physical Activity Questionnaire (IPAQ) was used, a long adapted version. Data were collected through a questionnaire (anamnesis) with 12 questions, 8 (eight) open and 4 (four) closed, applied in person (Matsudo *et al.*, 2012) and (Rech *et al.*, 2011). The questionnaire aims to identify the anthropometric profile, self-perception of health and the types of physical exercises most practiced by the elderly in gyms. The project was approved by the Human Research Ethics Committee of the Universidade União Educacional do Norte – UNINORTE, under number 5,661,927. All ethical aspects were respected, and all participants signed an informed consent form, in which they were informed about the objective of the study, as well as all the procedures performed. They were informed that their participation is voluntary and what the risks are in their participation. The data were represented using tables and graphs for better visualization. Data analysis was performed using the Statistical Package For the Social Sciences (SPSS) version 20. The variables were described as mean, standard deviation, absolute and relative frequency.

## RESULTS

In total, the sample consisted of 83 elderly people, 74.70% were female and 25.30% were male, regarding the characteristics of the evaluated, the mean age in years was  $67.20 \pm (6.12)$ , the mean weight was  $69.50 \pm (11.99)$  kg, the mean height was  $1.60 \pm (0.09)$  cm and the BMI – body mass index was  $27.00 \pm (4.44)$  as we can see in Table 1.

Table 1. Anthropometric profile of the elderly by sex.

Variables	%Total		% Male		% Female	
	Me	DP	Me	DP	Me	DP
Age	67,20	6,12	67,97	7,11	66,89	5,97
Weight	69,50	11,99	79,11	10,01	66,28	10,87
Stature	1,60	0,09	1,72	0,06	1,56	0,06
BMI	27,00	4,44	27,76	2,82	27,10	4,88

Me – Average; SD – Standard Deviation; BMI – Body Mass Index – Kg/m<sup>2</sup>

Regarding the BMI classification, 12.00% were underweight, 47.00% were within normal weight, 27.70% were classified as overweight, 9.60% were at the level of obesity grade I and 3.60% were obese grade II (Severe), highlighting that in the levels of obesity only women were in this classification, as we can see in table 2.

Table 2 - BMI Classification Index and Overall Percentage and by sex.

BMI Rating	% Overall	% Male	% Female
Underweight	12,00	9,50	12,90
Normal Weight	47,00	47,60	46,80
Overweight	27,70	42,90	22,60
Obesity Grade I	9,60	-----	12,90
Grade II Obesity (Severe)	3,60	-----	4,80

% - Percentage

Regarding self-perception of health in general, 30.10% answered that they considered their health status regular, 48.20% considered their health classified as good, 12.00% as very good and 7.20% as excellent health, in relation to poor health status, none of the interviewees considered to be at a poor level and only 2.40% did not answer. as seen in Table 3.

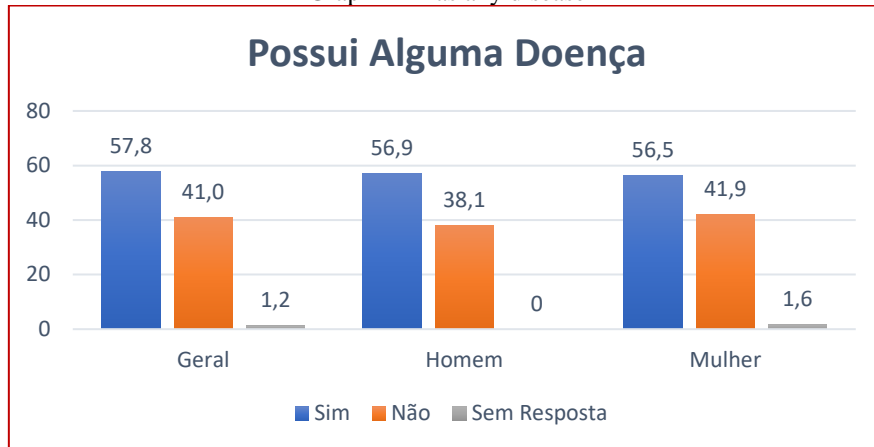
Table 3 - General Self-Perception of Health

Self-Perception of Health	% Overall	% Male	% Female
Spacious	-----	-----	-----
Regular	30,10	14,3	35,50
Good	48,20	57,10	45,20
Very good	12,00	9,50	12,90
Excellent	7,20	14,30	4,80
Did not respond	2,40	4,80	1,60

% - Percentage

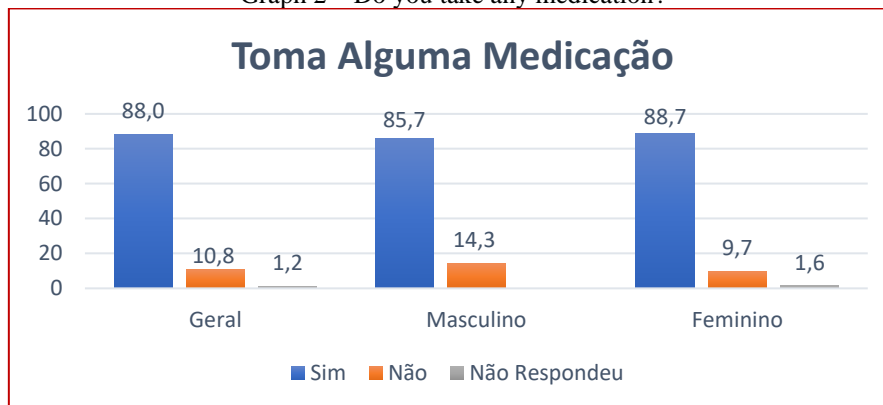
Regarding whether or not they had any disease, in general, 57.80% of the elderly said they had some type of disease and 41.00% said they did not have any type of disease, in relation to men and women separately, 56.90 and 56.50% said they had some disease and 38.1 and 41.9% answered they did not have any disease, only 1.60% of the women did not know how to answer, As we can see in Graph 1.

Graph 1 - Has any disease



The prevalence of taking some type of medication was 88.0%, and only 10.80% reported not taking medication. Both men and women have similarities in terms of use, as can be seen in Graph 2.

Graph 2 – Do you take any medication?



Regarding which disease they have, it is noteworthy that 37.90% of the interviewees reported not having any disease, 16.90% had arterial hypertension, 9.60% had some heart disease and 8.40 had diabetes. Among men, the highest number of diabetes stands out, being 28.60%, while in women it is 1.60%, as seen in table 4.

Table 3 - Which disease do they have

Diseases	% Overall	% Male	% Female
Hypertension	16,90	4,80	21,10
Hypertension and IBS	1,20	4,80	-----
Diabetes	8,40	28,6	1,60
Diabetes and Hypertension	2,40	-----	3,20
Cardiopathy	9,60	19,00	6,50
Osteoporosis	2,40	-----	3,20



Hérnia de Disco	3,60	-----	4,80
Arthrosis	6,60	-----	8,10
Depression and SP	4,80	4,80	4,80
Fibromyalgia	3,60	-----	4,80
No	37,90	38,10	37,10
Didn't inform	3,60	-----	4,80

% - Percentage; IBS – Irritable Bowel Syndrome; SP – Panic Disorder;

Regarding which are the physical exercises most practiced by the elderly in gyms, in general 33.70% stated that they practice weight training, 19.30% practice water aerobics, and the practice of more than one activity was also reported, such as weight training and walking 10.80%, weight training and gymnastics 19.30% and weight training and 4.80%, as shown in table 5.

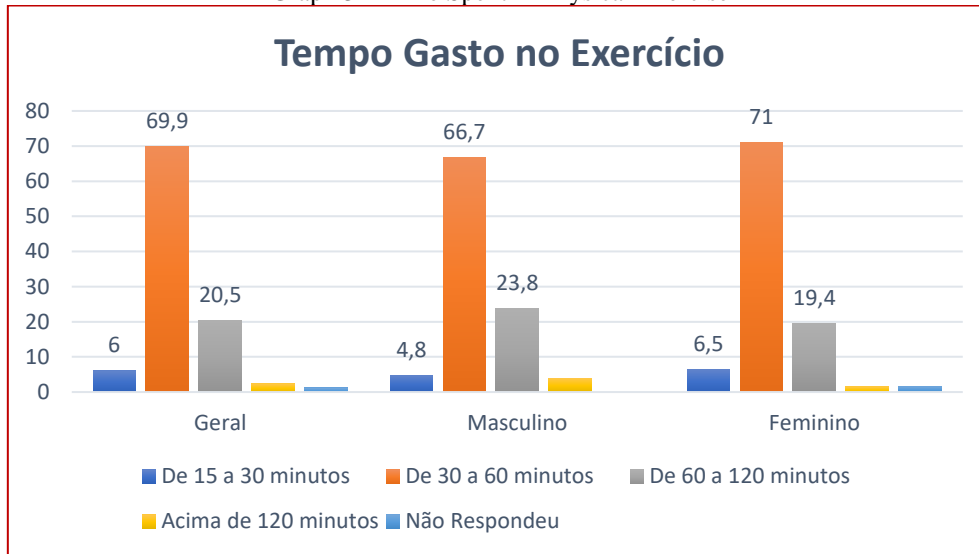
Table 4 - Which physical exercise do I practice

Exercise	% Overall	% Male	% Female
Bodybuilding	33,70	38,10	32,30
Weight Training & Walking	10,80	14,30	9,70
Bodybuilding and Gymnastics	19,30	14,30	21,00
Bodybuilding and Water Aerobics	4,80	9,50	3,20
Aerobics	19,30	14,30	21,00
Water Aerobics and Walking	2,40	4,80	1,60
Water Aerobics, Bodybuilding and Hike	3,40	-----	3,20
Walking & Biking	1,20	4,80	-----
Race	2,40	9,50	-----
Pilates	2,40	-----	3,20
Did not respond	1,20	-----	1,60

% - Percentage

Regarding the time spent in the exercise in minutes, it was verified that in the general conception 6.0% use 15 to 30 minutes for the practice of the exercise, 69.90% use 30 to 60 minutes, 20.50% need 60 to 120 minutes and only 2.40% do the exercises with more than 120 minutes. The data separated by gender are similar to the general context, as can be seen in Graph 3.

Graph 3 – Time Spent in Physical Exercise



Talking about the days of practice, the prevalence of practitioners three times a week was 34.90%, for five days a week it was 42.20%. When identified by gender, 43.00% of the women practice the activities three times a week and 47.50% of the men practice the activities five times a week, as shown in Table 6.

Table 5 – Days of Physical Exercise

Days	% Overall	% Male	% Female
1	1,20	4,80	-----
2	8,40	9,50	8,10
3	34,90	9,50	43,50
4	6,00	9,50	4,80
5	42,20	47,60	40,30
6	4,80	14,30	11,60
7	1,20	4,8	-----

% - Percentage

Of the elderly interviewed, the prevalence of physical exercise by measured recommendation was 53.00%, the prevalence was 36.20% for those who sought to practice physical exercise for their own motivation, by family indication was 2.40%, for the fact of liking to practice the prevalence was 3.60% and 2.40% reported that they tried to practice physical exercise to be able to leave the house, as seen in Table 6.

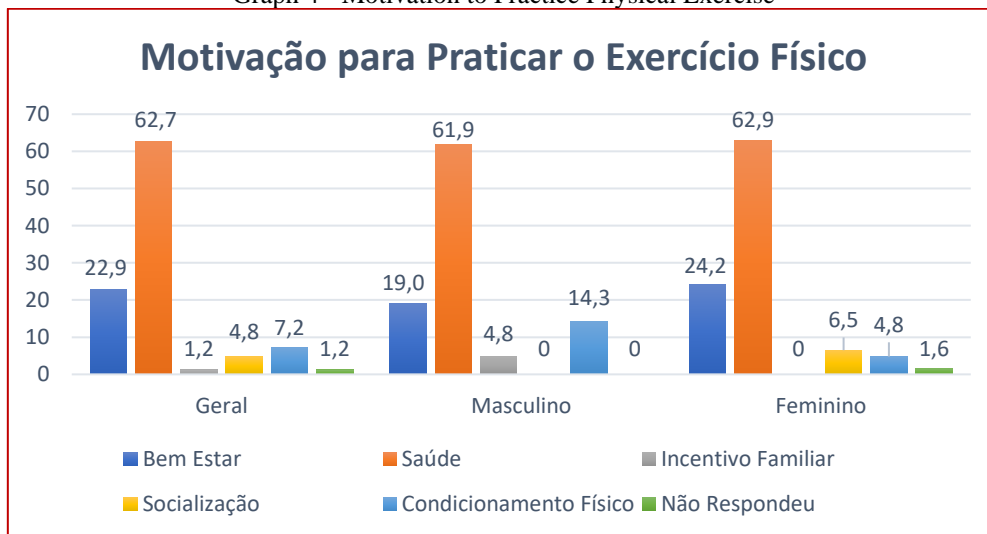
Table 6 - Why they tried to practice physical exercise

Exercise Search	% Overall	% Male	% Female
Medical Recommendation	53,00	28,60	61,30
Self-Motivation	36,10	57,10	29,00
Familiar indication	2,40	4,80	1,60
Likes to Practice	3,60	4,80	3,20
To Leave the House	2,40	-----	3,20

Nutritionist	1,20	4,80	-----
Did not respond	1,20	-----	1,60
% - Percentage			

Regarding the motivation to practice physical exercises, most seek to improve health and well-being, with a general prevalence of 62.70% and 22.90% respectively, with no difference between the sexes, as seen in graph 4.

Graph 4 - Motivation to Practice Physical Exercise



## DISCUSSION

It was observed that among those who practiced physical exercise, the prevalence was 74.7% of women practitioners, which corresponds to three times more than their effective participation in relation to men. A survey conducted with 79 elderly people in Pará found a prevalence of 75.00% of female physical activity practitioners compared to men (Slope *et al.*, 2019). The search for the practice of physical activity by the female public has been growing every day, much is due to the understanding and need to improve the quality of life, health and not leaving the need to maintain body appearance, with women being more vain than men (Bihain, 2018).

In terms of anthropometric profile, the mean age in years was  $67.20 \pm (6.12)$ , body mass was  $69.50 \pm (11.99)$  kg, mean height was  $1.60 \pm (0.09)$  cm, and BMI – body mass index was  $27.00 \pm (4.44)$  kg/m<sup>2</sup>. Compared to gender, men tend to be heavier and taller than women, but this effect is attenuated by the proportionality between body mass and height of both genders (Azevedo Filho *et al.*, 2019).

Regarding the BMI classification, it is observed that almost half of the participants are within the ideal weight for this population, based on the BMI classification table for the elderly





(Health Indicators – Sisvan, 2004). It is noteworthy in relation to men that in the classification of overweight the prevalence is twice as high as in relation to women, however, for the classification of both obesity grade I and obesity grade II, only women were found at this level. In this case, a larger number of female participants can be considered, and in order for the results to be evaluated more accurately, the sample would need to be expanded. In line with these results, it is observed in the study of (Oliveira; Neto, 2020), the similarity of the prevalence of normal weight (normal weight) was 46.00%, followed by obesity classification in 38.00% and the lowest classification was underweight with a prevalence of 6.00% of the participants.

Regarding self-perception of health, the data are similar in both sexes, with the exception of regular self-perception of health, where women had a prevalence twice as high as men, while men had a prevalence three times higher in the classification of excellent than women. It is important to be cautious when assessing health status, as individuals often relate what their own health was like before, the assessment reflects an immediate state of the individual, and it is necessary to reliably clarify well-being and health conditions (To; Scantlebury; Jones, 2017).

Physical exercise is an important factor that contributes to the improvement of quality of life and health in general, and we cannot evaluate any casual effect of physical activity in the present study, but the health benefits of regular exercise among older individuals are well documented (Olsson; Currow; Ekström, 2022).

Related to diseases, in general, more than half of the interviewees reported having some type of disease, here where there is a disparity, where 88% of the elderly reported using some type of medication, this fact being slightly above the self-report of some morbidity, a fact that can be explained by the long time of use of less complex medications and automatic control of some diseases, causing some people to portray it as being normal in their daily lives or simply forget about the disease by alleviating the symptoms (Franco *et al.*, 2023). Regarding self-reported diseases, it is observed that the prevalence of hypertension is four times higher in women than in men, on the other hand, in men, the higher number of diabetes and heart disease is highlighted, with the prevalence being twenty times and three times respectively more comprehensive in them than in women. Men may be more susceptible to cardiovascular disease and diabetes throughout their lives than women, which may be related to poor eating habits and non-adherence to routine health controls (Turin *et al.*, 2017).

When it comes to which physical exercises are practiced the most, the work done in bodybuilding stands out, where a third of the interviewees, regardless of gender, perform this activity, followed by water aerobics as isolated activities. As for the combination of modalities,



weight training associated with water aerobics and weight training associated with exercise classes were the most answered by them. Corroborating this work, a study evaluated 77 elderly individuals from Fortaleza, Ceará, with a prevalence of 76.20% elderly people practicing bodybuilding and 22.10% practicing water aerobics (Campina *et al.*, 2019). Weight training is a modality with numerous benefits, such as: pain relief, increased muscle strength, increased body balance and flexibility, increased self-esteem and self-image, improved sleep quality and social interaction (Gurgel, 2020). Water aerobics, in addition to benefits similar to bodybuilding, has a reduction in impact during its practice, being highly recommended and adhered to by this public (Rodrigues *et al.*, 2022).

Regarding the time spent performing physical exercise, the prevalence of spending between 30 and 60 minutes was 70.00%, followed by the need for time between 60 and 120 minutes with a prevalence of 20.50%, which seems very relevant, as they are in accordance with the recommendations of the American College of Sport Medicine (ACSM). Individuals who perform at least 30 minutes of physical exercise per day for five days a week, totaling a minimum of 150 minutes per week, are considered active, as mentioned in (Sip *et al.*, 2016). Similar to the data found in this study, a study conducted with 51 elderly people showed that 61.20% of the participants performed their activities in a time between 30 and 60 minutes (Pinto; Matos; Alves, 2019).

Regarding the number of days per week for physical exercise, almost half of the participants performed their activities three to five days a week, with women practicing most of the activities three times and men five times a week. These data meet the practice indication suggested by the Physical Activity Guidelines for Americans (Piercy *et al.*, 2018). Similar to this study, a study with 2157 Europeans found a prevalence of 65.00% in the frequency of their activities in individuals practicing physical activity, which is in accordance with the recommendations for weekly practice of physical activity of three to five days (Mattle *et al.*, 2022).

For the medical recommendation, more than half of the participants declared to start physical exercises due to the request of a doctor, and one third of the interviewees highlighted their own motivation to start their training programs. Compared to gender, women had twice as much prevalence as men when it came to medical recommendation, while men had almost twice as much prevalence in search of self-motivation than women. Corroborating the findings of this study, a study carried out with 8736 Portuguese elderly people found a prevalence of medical indication of 48.90%, while in another study found a prevalence of 56.70% of the participants



who received a medical indication to perform the activities, due to the high number of comorbidities that affect this population, in this way, the average indication ends up standing out over all other reasons (Teixeira; File; Andrade, 2020).

Regarding the motivation to practice physical exercises, the prevalence of motivation after contact with a doctor was 62.70%, and this motivation reflects directly on the search for improved health and quality of life (Wood *et al.*, 2013). Given this, it is assumed that the vast majority only seek the practice of exercise when they are already affected by some disease, a worrying moment, because the motivation for other factors that would not directly affect health would be more interesting. However, further research related to the lifestyle habits and practice of physical activity by the elderly population is suggested, so that measures can be developed in order to raise awareness of the practice of exercise in a natural way and not when the health-disease process is already implemented in individuals.

## CONCLUSION

It can be concluded that almost half of the interviewees are classified as normal weight, however, almost all of the other half of the group is overweight and obese, with special emphasis on women because they are the only ones classified as obese, a worrying fact that directly reflects on the health status of these individuals. For the general state of health, it was identified that almost 88% of the interviewees use some type of medication, that is, they already have some disease, also having the medical recommendation for the practice of physical exercise, a determining fact for more than half of the participants, but despite this alarming number, almost half of the elderly consider the level of health as good. It may be a reflection of the attenuation of medication and the practice of physical activity.

About the most practiced types of physical exercises, there are bodybuilding and water aerobics, being modalities that act directly in increasing muscle strength and endurance, making them more willing to day to day, not to mention other numerous benefits provided by these activities, and the practice of these modalities is very relevant to contribute to the improvement of the general state of health and quality of life. It was also identified that most of them follow the ideal recommendations for physical exercise practices, both daily and weekly. In view of the above, we recommend the need for further studies on the subject, as they are extremely relevant for improving health, quality of life and increasing life expectancy for the elderly population.



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