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Analysis of cardiovascular risk and quality of life in elderly people in a city in the interior of Pernambuco – Brazil

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Abstract: In Brazil and in the world, the survival of the elderly population is increasing, in which it is the phase of life characterized by a decrease in functional reserves and the capacity of the body to adapt to sudden changes, making it more vulnerable. Aging is the main risk factor for cardiovascular disease. And to try to minimize this process, physical exercise has been indicated as a fundamental part of the global health promotion programs. The object of study, to evaluate the effects of physical exercise on cardiovascular risk in the active and sedentary elderly. It is exploratory research with a quantitative / qualitative approach of the transversal type. The collection was performed in a Basic Health Unit (UBS) in the municipality of Vitória de Santo Antão. The population was randomly constituted by 60 elderly people of both sexes, with ages between 60 and 80 years. The results depict: mean age 1.60 (+0.066); weight - mean 101.31 (+9.94); BMI - mean 27.69 (+3.75); PAS - mean - 130.66 (+10.39); PAD - mean 80.5 (+12.67). Patients HAS (n = 57) or equivalent to 60% of the sample. It concludes the practice of regular physical activity provides the elderly with a better quality of life.

Keywords: Physical activity. Aging. Risk factors. Quality of life.

1. Introduction

According to the World Health Organization (WHO), Brazil is among the countries with the highest rate of growth of the elderly population, with high expectative life, believed in 2025, will be the sixth country in the world with the highest number of elderly (JANUÁRIO *et al.*, 2011; MOTA, 2017).

Aging is a physiological process that reduces physical, psychological and behavioral capacities, such changes are related to structural and functional changes, thus having an impact on the individual's adaptation to the environment, causing greater vulnerability to diseases, reflected in the Quality of life (QoL) of this population (FREITAS *et al.*, 2016).

Physical activity (PA) has been indicated as a fundamental part of the worldwide programs for promoting the health of the elderly, the most active the elderly, greater their satisfaction with life and consequently improves their quality of life (QoL) (SOUSA *et al.*, 2017).

Studies show that regular physical activity reduces deaths from heart diseases, even when the elderly were sedentary throughout life, it was found that the low level of physical activity potentiates negative results in the health of the elderly (OLIVEIRA; BERTOLINI; BENEDETI, 2012).

In addition, the elderly is more likely to have Metabolic Syndrome (MS) which is characterized by the presence of a set of risk factors such as obesity, hypertension, diabetes, dyslipidemia, where all these factors are related to the impact of the quality of life of the elderly and leaving even more susceptible to cardiovascular diseases. Since there are few studies in Brazil focused on the prevalence of MS, therefore, the need to develop strategies to reduce the components of MS, giving the elderly even more quality and satisfaction in living independently (PAULA *et al.*, 2015).

Given the changes that occur during the aging process, physical activity appears as a possible way to delay functional declines, reducing the onset of chronic diseases in healthy elderly or chronically ill.

In this context, the relationship between physical activity and health, quality of life and aging has been the target of scientific research (DINIZ, 2013). Thus, this study aims to evaluate the effect of physical activity on cardiovascular risk

in the elderly of a city in the interior of Pernambuco.

2. Methodology

This is an exploratory, cross-sectional descriptive study with a quali-quantitative approach. The collection was carried out in Basic Health Units (UBS) in the municipality of Vitória, Santo Antão/PE, from January to July/2017.

The sample was randomly composed of 60 elderlies of both sexes, with age, divided into two groups, 36 inactive and 24 actives.

The inclusion criterion to be considered active elderly, those who practiced physical exercises for more than six months, and for sedentary elderly, those who did not practice any type of activity or regular physical exercise program.

Elderly with neurological and cardiac diseases that generated severe physical limitations and dependence, wheelchair users, bedridden or who refuse to sign the Informed Consent.

Data collection was performed through the application of the semi-structured questionnaire, composed of multiple-choice questions (36 questions), containing the information related to: Anthropometric measurements (4 questions); Socioeconomic profile (8 questions); Risk factors for CVD (15 questions); Quality of life analysis (9 questions).

The weight and height values of the individuals were recorded using a scale and a measuring tape, from these data, BMI values were calculated. Systemic Blood Pressure was verified using the auscultatory method. To analyze the socioeconomic profile and the identification of risk factors, a questionnaire elaborated by the researchers of this study was applied. While analyzing the quality of life of the elderly, it was based on the SF-36 instrument.

All volunteers were informed about the procedures and objectives of the study and, after agreeing, signed the free and informed consent form, according to the orientation of resolution n. 466/2012 and 510/2016 of the National Health Council (CNS), regarding ethical and legal aspects for research with human beings.

For analysis of the results, a database was elaborated

through the Microsoft Office Excel 2010 program and later, the analysis of data of those processed in biostatic 2010 statistical program, mean, standard deviation, minimum and maximum for data with quantitative approach. For a qualitative approach, the total sample was used via response, presenting its percentage.

3. Results and Discussion

According to table 1, the results of height, BMI, SBP and DBP of the collected elderly are used. The mean BMI was 27.69 kg/m² (standard deviation \pm 3.75). While the mean SBP was 130.66 mmHg (standard deviation \pm 10.39) and DBP are 80.5 mmHg (standard deviation \pm 12.87).

Table 1. Statistical description of age, height, weight, BMI, Systolic Blood Pressure (SBP) and Diastolic Blood Pressure (DBP) of patients.

Variables	Media	Standard deviation	Minimum	Maximum
Height (m)	1.60	0.066	1.45	1.73
Weight (kg)	101.31	9.94	80	121
BMI (kg/m ²)	27.69	3.75	19.02	35.59
PAS (mmHg)	130.66	10.39	110	150
Pad (mmHg)	80.5	12.67	10	100

BMI: Body mass index; SBP: Systolic Blood Pressure; DBP: Diastolic Blood Pressure; m: meter; ms: millimeters per second; kg: kilograms; min-Max: minimum-maximum; mmHg: Millimeters of mercury.

As described in Table 2 when evaluating the risks of the elderly developing cardiovascular pathologies: 60% of the sample does not practice physical activity frequently, 11.66% never smoked, this is a cardiovascular protection factor, however, (n=57) 95% of the sample presented SAH and DM2 (n= 34) 34% of the sample.

Table 2. Statistical description of the risks of cardiovascular pathologies: practitioner of physical activity (PA), Smoking, Systemic Arterial Hypertension (SAH), Diabetes Mellitus type 2 (DM2).

Variables	n	Percentage	Risk Description
AF	36	60%	Do Not Practice AF from regular way
SMOKE	7	11,66%	Never Smoked
HAS	57	95%	SAH carriers
DM 2	34	34%	DM2 carriers

PA: Physical Activity; SAH: Systemic Arterial Hypertension; DM2: Type 2 Diabetes Mellitus.

Table 3 describes factors on quality of life, where (n=20) 33.33% present little pain when analyzing the presence of physical pain. When analyzing the item climbing stairs, (n=26) 43.33% presented medium difficulty. When climbing more than one flight of stairs, the sample (n=22) 36.66% presents

medium difficulty.

Table 3. Statistical description on quality of life: physical pain, climb a flight of stairs and climb more than one flight of stairs.

Variables	n	Percentage	Quality description of Life
	1	1,66%	Extreme Pain
	7	11,66%	A Lot of Pain
Physical Pain	7	11,66%	No Pain
	20	33,33%	Little Pain
	24	40%	Media Pain
Climb a Flight of Ladder	5	8,33%	No Difficulty
	19	31,66%	Little Difficulty
	26	43,33%	Media Difficulty
	10	16,66%	Too Much Difficulty
Climb more than one run of Ladder	1	1,66%	Extreme Difficulty
	5	8,33%	No Difficulty
	19	31,66%	Little Difficulty
	22	36,66%	Media Difficulty
	13	21,66%	Too Much Difficulty
	1	1,66%	Extreme Difficulty

In the description of table 4, in front of the item bathing and dressing (n=52) 86.66% of the sample has no difficulty for such action. When analyzing walking in one block (n=20) 33.33% presented medium difficulty to perform this action.

Table 4. Statistical description regarding the perception of quality of life: bathing and dressing and walking a block

Variables	n	Percentage	Quality description of Life
Bathing and dressing	52	86,66%	No Difficulty
	7	11,66%	Little Difficulty
	-	0%	Media Difficulty
	1	1,66%	Too Much Difficulty
	-	0%	Extreme Difficulty
Walk one block	11	18,33%	No Difficulty
	11	18,33%	Little Difficulty
	20	33,33%	Media Difficulty
	10	16,66%	Too Much Difficulty
	-	0%	Extreme Difficulty

The research focused on analyzing the effect of physical activity on active and sedentary elderly, in addition to the effect of physical activity between both, also verifying the risk factors that cause cardiovascular diseases.

According to Pereira (2017), physical activity in the elderly appears as a tool for improving quality of life (QoL), helping to improve health and disease prevention. Therefore Januário *et al.*, (2011) reports on the need to recommend PA at least 30 minutes a day, most days a week, preferably every

day continuously and cumulatively.

According to Ferreira *et al.*, (2016) the concept of active elderly can be any practice that exercises action, such as physical activity with a minimum frequency of two days per week. It was found that even individuals who started their practice a short time ago had positive results in front of those who were sedentary. For those who have practiced for many years, the results were even better. For this reason, the need to get out of inactivity brings with it considerable health benefits (CHRISTOF, 2015).

Ferretti *et al.*, (2015), in a study with 120 elderly (composed of 60-year-olds, practitioners and non-practitioners of physical activities), report that physical exercise is an important determinant to keep the elderly healthy.

This study shows the low number of active elderly and that despite having become one of the most important contemporary themes, there are still few active elderlies compared to the amount of sedentary, correlating with several literatures (JANUARIO *et al.*, 2011; BITTAR; SILVA *et al.*, 2012; PIRES *et al.*, 2013).

In this context, according to the study by Januário *et al.*, (2011) sedentary elderly has decreased perception of quality of life, especially when analyzing the components related to functional capacity and social aspects, becoming a very strong impact on their quality of life (NETO; LIMA, 2012).

Also in this research, there was a highlight in relation to the risk factors (RF) prevalent in the study, such as: sedentary lifestyle; hypertension and increased abdominal circumference. Observing other studies, Diniz (2013) reports on the main risk factors most common in his research, which were: increased abdominal circumference, hypertension and sedentary lifestyle. While in the study by Bernardo *et al.*, (2013), he presented age and hypertension as the main risk factors for cardiovascular diseases, followed by smoking and stress, without significant values for both sexes. Therefore, it is essential not to mention metabolic syndrome (MS), which is based on a set of risk factors that manifest themselves in the individual and increases the chance of developing cardiovascular diseases.

According to the previous literature, Zoraski *et al.*, (2017) brings in his study, some important points about MS. Where there is a high prevalence in the elderly, because it is the group most likely to trigger the risk factors of this syndrome, therefore, it evidences the need for actions, still in adulthood, aiming at the creation of strategies that holistically affect the health of the elderly.

As already discussed, Santos *et al.*, 2017, conducted research, which makes clear the need for health professionals to act in the control of risk factors, in the search to reduce cardiovascular risk, through prevention and intervention strategies, because these are effective to reduce the frequency of this disease and its impact on the health of the elderly.

As a limitation of the study, there was no significant number of active elderlies for better comparison with the

sedentary group, this shows the lack of stimulation on the part of the elderly. It is seen that there is still a need for new programs or actions to promote health aimed at physical activity and the elderly so that it allows more stimulation for the elderly.

4. Conclusion

From the results found, it is possible to conclude that the practice of regular physical activity provides the elderly with a better quality of life, in addition to health prevention, which reduces the risk of heart disease. Therefore, in order to benefit from a healthy old age, it is important that, combined with physical activities, the elderly incorporate healthy habits into their daily lives and have a greater interaction in the society in which they live, participating in projects and programs elaborated by governments and communities. Thus, encouraging government agencies to invest in actions, enabling a reduction of disease in the elderly, thus reducing public spending. However, it emphasizes the importance of other studies among similar studies in different places in order to confirm the result found.

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