

Physical activity, life purpose of community active elderly people: a cross-section study

Atividade física, propósito de vida de idosos ativos da comunidade: um estudo transversal

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ABSTRACT | INTRODUCTION: Physical activity performed on a regular basis is highly effective in delaying the physiological decline of the aging process, maintains and optimizes physical capacity, improves functionality and has an impact on the purpose of life in old age. **OBJECTIVE:** characterize and describe sociodemographic, physical and life purpose conditions in a group of elderly regular physical activity practitioners within the Amazon region. **METHODS:** Cross-sectional study with active elderly people who perform physical activity in their communities at least 3 times a week around 50 minutes. These were evaluated using validated questionnaires and scales: Mini Mental State Examination (MMSE), Trail Test, Life Purpose, Short Physical Performance and Battery Test (SPPB), Functional Comorbidity Index, Numerical Pain Scale and data were collected regarding sociodemographic characteristics. **RESULTS:** Of the 36 participants, 100% are from the interior of Amazonas state; 28 (77%) survive on monthly minimum wage income; 27 (75%) reported feeling pain in some part of the body and 21 (58.3%) presented overweight or obesity grade; 1, 33 (91.6%) say they feel good when they think of the past and in the future. **CONCLUSION:** In spite of the grief of feeling pain, of low income and low education, the elderly engage in physical activity that is beneficial as physical maintenance, reduction in depressive symptoms and perceived motivation, satisfaction and happiness in living.

KEYWORDS: Aged. Physical activity in group. Personal motivation.

RESUMO | INTRODUÇÃO: A atividade física feita de maneira regular tem grande eficácia no retardo do declínio fisiológico do processo do envelhecimento, mantém e otimiza a capacidade física, melhora a funcionalidade e tem expressão no propósito de vida na velhice. **OBJETIVO:** Caracterizar e descrever as condições sociodemográficas, físicas e de propósito de vida em um grupo de idosos praticantes de atividade física regular no interior do Amazonas. **MÉTODOS:** Estudo transversal com idosos ativos da comunidade que realizam atividade física em suas comunidades por pelo menos 3 vezes na semana em torno de 50 minutos. Estes foram avaliados através de questionários e escalas validadas: Mini Exame Estado Mental (MEEM), Teste de Trilha, Propósito de Vida, Teste Short Physical Performance e Battery (SPPB), Índice de Comorbidades Funcional, Escala numérica de dor e foram coletados dados referentes às características sociodemográficas. **RESULTADOS:** Dos 36 participantes, 100% são naturais do interior do Amazonas; 28 (77%) sobrevivem com renda mensal de salário mínimo; 27 (75%) relatam sentir dor em alguma parte do corpo e 21 (58,3%) apresentaram sobrepeso ou obesidade grau 1, 33 (91,6%) diz se sentir bem quando pensam no passado e no futuro. **CONCLUSÃO:** Apesar de sentir dor, de baixa renda e baixa escolaridade, os idosos praticam atividade física que traz benefícios como manutenção da saúde física, diminuição dos sintomas depressivos, percepção de realização, motivação, satisfação e felicidade em viver.

PALAVRAS-CHAVE: Idoso. Atividade física em grupo. Motivação pessoal.

Introduction

Aging is the natural dynamic and progressive biological process of the human being, caused by changes in the production and storage of molecular and biochemical components causing morphological, physiological, physical and psychological changes. Those changes can generate several disorders, mainly the loss of the individual's functional independence and adaptation to the environment, leading to vulnerabilities to acquire pathological agents that can lead to death¹⁻².

The increasing population of people aged 60 or older is a worldwide event². In Brazil, it is possible to notice the change in the age pyramid format, according to the Continuous National Household Sample Survey - Characteristics of Residents and Households. There was an increase in the number of elderly people of 4.8 million from 2012 to 2017, consisting of 18%³. In Amazonas, the population index grew 3.5% in ten years, corresponding to 8.8% of the population, with more than 347,000 elderly people⁴.

Regular physical activity is highly effective in delaying the physiological decline of the aging process, maintaining and improving quality of life, cardiovascular function, strength, functional capacity, muscle mass, capacity, in addition to preventing and controlling chronic degenerative diseases and harmful emotional states such as depression⁵⁻⁶. Regular physical activity is defined as a planned, structured and repetitive event that aims to maintain and improve physical fitness and the elements that integrate it⁵.

Successful old age also involves factors related to the emotional health of the elderly, verifying a psychological well-being that corresponds mainly to the domain of life purpose. This refers to the feelings that his existence has meaning and direction, in addition to goals and plans that are achievable in the short, medium or long term. It is a perception of the individual's life about his personal evolution, happiness, satisfaction, self-love, self-confidence, motivation to live and carry out his life activities⁷.

The aim of this work was to characterize and describe the sociodemographic, physical and life purpose conditions in a group of elderly people who

practice regular physical activity in the countryside of Amazonas.

Materials and methods

This is a cross-sectional study, carried out in the municipality of Coari, in the countryside of Amazonas, approximately 350km away from the state capital, with a population of approximately 75,965 inhabitants⁸. This study was approved by the Ethics Committee under opinion No. CAAE08021419.2.0000.5020.

The sample consisted of convenience with elderly people aged 60 to 89 years old, participating in a group of regular physical activity for at least 3 times a week for 50 minutes in sport blocks or demarcated points in their neighborhoods, according to the Municipality Health Unit of Coari - Amazonas. Data collection was carried out from August to September 2019, in the location that the elderly person wished to be evaluated.

The inclusion criteria were: active elderly people who practice regular physical activity; age ≥ 60 years old; walking with or without assistance; living in the municipality and accepting to participate in the research.

The exclusion criteria were: sedentary elderly, age less than 60 years old, unable to walk with or without assistance, not living in the municipality and not accepting to participate in the research.

The information was collected through a structured questionnaire, cognitive test and physical test applied by trained evaluators, answered and performed by the elderly themselves. The analyzed variables were:

- 1) Sociodemographic characteristics: name, address, neighborhood, date of birth, age, gender, place of birth and telephone number.
- 2) Socioeconomic characteristics: education, years of schooling, current occupation, monthly income, live alone or with whom.
- 3) Health-related characteristics: a) health condition: urinary incontinence, dizziness, memory problems,

sleeping problems; b) number of medication in regular use: medication and dose; c) use of assistive walking device: yes or no, if yes, cane, walker, crutch; d) Mr., would you say that your vision / hearing is: excellent, good, regular, terrible; e) uses a hearing aid: yes or no;

4) Functional Comorbidity Index: it is a scale composed of 18 comorbidities, to which the subject answers yes or no if he has each of it⁹.

5) Body Mass Index (BMI), calculated based on self-reported weight and height information¹⁰.

6) Cognitive assessment:

a) Mini Mental State Examination: it is a test to assess cognition, with a total score of 30 points, and it is composed of two domains grouped into seven categories: orientation for time, orientation for place, record of three words, attention and calculation, recollection of the three words, language and visual-constructive praxis. Schooling is a factor that influences the results for cognitive impairment, therefore, the following cut-off scores were used: 20 for illiterates, 25 for 1 to 4 years of study, 27 for 5 to 8 years, 28 for 9 to 11 years, 29-30 for 12 years or more¹¹⁻¹².

b) Modified Trail Making Test 2B: it is used to evaluate the selective attention function, the ability to alternate the focus even with stimuli of inattention and mental flexibility. In the application, the subject is asked to connect a number to a letter in ascending order (example: 1-A, 2-B), if the whole test is correct there is a score, if not, it is considered cognitive impairment¹².

7) Geriatric Depression Scale: it is a scale composed of 15 questions of yes or no answers, the result is given by the sum of scores, the higher the score the greater the intensity of depressive symptoms¹³⁻¹⁴.

8) Numerical quantification of pain: the numerical pain scale is used to measure pain in the elderly, and it is considered the most reliable to be applied to this age group. It has a scale from 0 to 10, being 0 without any pain and 10 the worst possible. In addition, a question was asked regarding the area in which the pain was located¹⁵⁻¹⁶.

9) Physical Capacity: the Short Physical Performance Battery Test (SPPB) is indicated to assess the functional capacity of the elderly and to screen for future deficits in the following areas: gait speed in usual step, static balance in orthostatic position, resistance and strength of lower limbs by observing whether the elderly can get up and sit in the chair¹⁷.

10) Life purpose: it is a questionnaire with 10 questions to assess the patient's psychological state in relation to overall satisfaction with life, goals achieved, self-esteem, among other aspects⁷.

For the analysis procedure, an electronic spreadsheet was produced in the Excel 2013 program, where the data were tabulated and later exported to the Package for Social Sciences (SPSS) software 2010 version. A descriptive analysis was carried out by distributing the variables of interest to the study.

Results

The sample consisted of 36 elderly people who practice physical activity, aged between 60 and 89 years old, with a prevalent age group from 60 to 69 years old with 18 (50%), low income 31 (86.1%), predominantly women 26 (72%) and illiterate 24 (66.7%). The other characteristics of the sample are shown in table 1.

In the characterization of body mass index of the elderly, 21 (58.3%) range from overweight to grade 1 obesity and 27 (75%) report feeling pain in some part of the body, but they still perform weekly exercises. The other physical characteristics are described in table 2.

The result of the life purpose questionnaire was evaluated, in which 33 (91.6%) of the elderly who practice regular physical activity claim to feel good when they think about the past and the future, and 25 (69.4%) disagree that the activities of daily life are not important. Further data are described in table 3.

Table 1. Sociodemographic characterization of elderly people who practice regular physical activity in a city in the countryside of Amazonas, 2019

Variables	n = 36
Age n (%)	n (% / ± DP)
Young seniors - 60 to 69 years old	18 (50)
Old seniors - 70 to 79 years old	14 (38.9)
Female gender, n (%)	26 (72)
Education (illiterate), average (SD).	2.5 (±1.79)
Years of schooling (0 to 5 years), n (%)	28 (77.7)
Monthly income (up to a minimum wage), n (%)	31 (86.1)
Retired, n (%)	30 (83.3)
Natural from the countryside of Amazonas, n (%)	36 (100)
Does not use walking aid, n (%)	36 (100)
Subjective perception of regular or poor vision, n (%)	30 (83.3)
Subjective perception of good hearing, n (%)	16 (44.4)
Live with spouse or child n, (%)	28 (77.7)
Uses 2 to 4 medications, n (%)	16 (44.4)
Uses Antihypertensive, n (%)	18 (50)
MMSE (score ≥ 20 normal)	
Did not score MMSE	5 (13.9)
Scored less than 20	19 (52.8)
Trail Making test, mean (SD)	0.2 (±0.4)
Did not hit the trail making test n (%)	28 (77.8)
GDS (≥5 Depressive symptoms), n (%)	20 (55.6)

MMSE (Mini Mental State Examination), GDS (Geriatric Depression Scale)

Table 2. Physical characteristics of the elderly who practice regular physical activity in a city in the countryside of Amazonas, 2019

Variables	n = 36
Functional comorbidity index n, (%)	n (%/ ±DP)
1 to 2 Comorbidities	14 (38.8)
Overweight to grade 1 obesity BMI	21 (58.3)
Visual impairment	20 (55.6)
SPPB, mean (SD)	7.5 (±2.2)
SPPB dimensions, mean (SD)	
Balance	3.7 (±0.6)
Walking Speed	1.8 (±1.0)
Strength	1.8 (±1.1)
Pain in some part of the body, n (%)	27 (±75.0)
Most frequent pain areas, n (%)	
Knee	7 (19.4)
Lumbar spine	5 (13.9)
Dorsal column	4 (11.1)
Numerical pain scale, n (%)	
4 to 6 of moderate intensity	13 (36.1)

SPPB (Short Physical Performance Battery); BMI (Body Mass Index).

Table 3. Life purpose of the elderly who practice regular physical activity in the countryside of Amazonas, 2019

Variables	n = 36
Life Purpose	n (%)
I have a sense of direction and purpose in life (I agree)	35 (97.2)
I feel good when I think about the past and the future (I agree)	33 (91.6)
I am an active person (I agree)	33 (91.6)
I make plans for the future (I agree)	30 (83.3)
I have goals in life (I agree)	30 (83.3)
Focus on the present (I agree)	26 (72.2)
Ordinary daily life activities (disagree)	25 (69.4)
I live one day at a time (I agree)	22 (61.1)
I do not have goals, waste of time (I agree)	19 (52.7)
I feel like I have done everything in my life (I agree)	19 (52.7)

Discussion

Most of the active elderly people in this study were women, with a low level of education with a predominance of illiterates, who live with a family member and are retired. This corroborates the data from the demographic study carried out in seven Brazilian cities with a prevalence of females, elderly women who also live in the countryside, they live with a son/daughter or among family members and are retired¹⁸⁻¹⁹.

The higher frequency of women in surveys is due to the fact that they are more concerned with their health^{2,11}. In addition to being more aware that in order to have a quality of life they need to practice physical activity¹⁹.

The low level of education and purchasing power of the active elderly in the countryside of Amazonas included in this study was not an obstacle to the practice of regular physical activity. The findings point out that more than half of the elderly who practice regular activities are illiterate or have few years of schooling and live with monthly income of a minimum wage. This result was demonstrated differently in a literature review in Brazil conducted by Maciel⁵, in

which low socioeconomic level and education were the main reasons for the elderly not to exercise. On the other hand, the elderly in this study, despite having these characteristics, practice physical activity.

Even with the regular practice of physical activity, the elderly in this study had a bad score when they were cognitively evaluated. This contrasts with what is found in the literature, that elderly people who practice physical activity associated with good schooling in the urban area score better when they are evaluated by the MMSE²¹. It should be emphasized that the elderly in this study have a low level of education with a predominance of illiterates.

This study demonstrated that active elderly people who practice physical activity have depressive symptoms. It is known that regular physical activity interferes in a positive way improving depressive symptoms and depression, and promoting well-being^{4,5,20}.

Hypertension is reported in the literature as the most prevalent comorbidity in elderly people who practice regular physical activity, which often lead these elderly people to be elective for exercise through UBS¹⁹⁻²¹.

Pain is a common complaint for the elderly and can reduce quality of life, as it promotes fragility, insecurity, threatening their autonomy and independence, limiting the practice of their daily and social activities^{15,22}.

The mention of chronic pain for more than 6 months is recurring in the literature, and is prevalent in the lumbar spine, dorsal spine, leg region and knee joint^{15,23}. According to Dellaroza MS et al.²³, physical activities are among the most quoted triggering pain factors for the elderly, and the greater the depressive symptoms the greater the pain intensity reference.

A study carried out by Ferreti F²⁴ with 385 elderly people pointed out a weak correlation that the level of physical activity decreases when the elderly person has pain and associated chronic diseases, it was also observed that elderly women who have chronic pain perform less physical activity.

When analyzing the results of SPPB scores in isolation, the elderly in this study perform better in static balance when compared to dynamic balance. Changes in balance, gait speed and decreased strength in lower limbs are predispositions to a higher risk of falling, and for the elderly people who have these characteristics, physical activity is recommended as a prevention¹⁷.

The results of the life purpose questionnaire applied to the elderly in the countryside of Amazonas were above average, with high scores for psychological well-being, self-esteem, direction and meaning of life, goals and objectives they intend to accomplish, personal growth, motivation to live, possessing a positive outlook on life and perception of happiness. Moreover, low income and education did not influence a reduction in the result. According to Ribeiro CC et al.⁷ in a study on life purpose with 187 elderly people, it was observed that the higher the income, the better the life purpose and the higher the education, the better the psychological well-being of this elderly person, as he proposes to use his functional capabilities to achieve his goals and objectives.

Age influences the meaning and direction of life goals, as the younger elderly people under the age of 80 are more willing physically and mentally and, therefore, they are able to fulfill their desired goals. On the other hand, those who are in the most advanced stage in their majority are more fragile, so they tend not to create many plans or have goals, because they think they are unattainable. The present study has a larger number of elderly people aged 60 to 79 years old, allowing a higher result in the assessment of life purpose⁷.

The best way to deal with the incapacity of old age is to have good social support, as this alleviates the impact of unforeseen illnesses and tensions, making it possible to increase self-esteem and the sense of control related to life and environment²⁵.

The elderly who practiced regular physical activity in the city of Coari, when approached, reported to have lack of time to be evaluated for this study, which directly impacted the sample size. Low schooling was another factor that made it difficult for the elderly to answer questions.

Conclusion

Active elderly people in the countryside of Amazonas have low education, low income, moderate cognitive impairment, are the vast majority hypertensive, report feeling moderate to severe pain in some part of the body, have low physical performance, especially in their dynamic functions. However, these factors are not barriers for the elderly to practice regular physical activity, and do not influence their life purpose, as they feel fulfilled, motivated, satisfied and happy. Moreover, they have greater social support since they have their family members and friends closer and present for easy access, which can be the provider of social well-being and personal growth.

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Author contributions

Duarte TCF participated in the design, literature review, data collection, statistical analysis, interpretation of results, writing and text review. Lopes HS participated in the literature review, interpretation of results, writing and critical review of the text. Campos HLM participated in the design, statistical analysis, interpretation of results and guided the work.

Competing interests

No financial, legal or political competing interests with third parties (government, commercial, private foundation, etc.) were disclosed for any aspect of the submitted work (including but not limited to grants, data monitoring board, study design, manuscript preparation, statistical analysis, etc.).

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