Original Article

FUNCTIONAL DISABILITY AND FACTORS OF ELDERLY PEOPLE WITH REGULAR PHYSICAL ACTIVITY: A CROSS-SECTIONAL STUDY

INCAPACIDADE FUNCIONAL E FATORES ASSOCIADOS DE IDOSAS PRATICANTES DE ATIVIDADE FÍSICA REGULAR: UM ESTUDO TRANSVERSAL

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RESUMO

A realização de estudos em diferentes regiões do país pode auxiliar no entendimento dos fatores associados à incapacidade funcional do idoso, considerando que este é um importante indicador de saúde e pode contribuir para intervenções nessa população, com o objetivo de reduzir o risco de dependência futura, complicação ou estabelecimento de doenças e morbidades crônicas. Esse estudo objetivou verificar os fatores associados à incapacidade funcional de idosas participantes de programa de atividade física de Manaus-AM. Estudo transversal foi conduzido em 416 mulheres idosas que responderam um questionário contendo informações sobre a incapacidade funcional (IF) (variável dependente) e variáveis independentes: idade, estado civil, renda mensal, escolaridade, aposentadoria, uso de medicação, índice de massa corporal, sintomas depressivos, doenças autorreferidas e percepção de saúde. A prevalência geral de IF foi de 25,7%, a qual esteve associada à idade ≥80 (OR=2,34, IC95%=1.11-4,94), ensino fundamental incompleto (OR=3,22, IC95%=1,24-8,35) e fundamental completo (OR=3,24, IC95%=1,40-7,50), sobrepeso (OR=2,77, IC95%=1,69-4,54), presença de sintomas depressivos (OR=4,40, IC95%=1.48-13.07), artrose (OR=3,31, IC95%=1.80-5.73), artrite reumatoide (OR=2,84, IC95%=1.57-5.15) e percepção de saúde negativa (OR=3,04, IC95%=1.19-7.78). Conclui-se que a IF esteve associada a fatores modificáveis de saúde (escolaridade, sobrepeso e sintomas depressivos) e não modificáveis (idade, artrite e artrose).

Palavras-chave: Avaliação em saúde. Idosos. Saúde do idoso.

ABSTRACT

Conducting studies in different regions of the country can help to understand which factors are associated with the functional disability of the elderly, considering that this is an important health indicator and may contribute to interventions in this population, aiming to reduce the risk of future dependence, complication or establishment of chronic diseases and morbidities. This study aimed to verify the factors associated with the functional disability of elderly women participating in a physical activity program in Manaus/AM. A cross-sectional study was conducted with 416 elderly women who answered a questionnaire with information on functional disability (dependent variable) and independent variables: age, marital status, monthly income, schooling, retirement, medication use, body mass index, depression symptoms, self-reported illness, and health perception. The overall prevalence of functional disability was 25.7%, which was associated with age ≥80 (OR=2.34, IC95%=1.11-4,94), incomplete primary school (OR=3.22, IC95%=1.24-8.35) and complete primary (OR=3.24, IC95%=1.40-7.50), overweight (OR=2.77, IC95%=1.69-4.54), presence of depression symptoms (OR=4.40, IC95%=1.48-13.07), arthrosis (OR=3.31, IC95%=1.80-5.73), rheumatoid arthritis (OR=2.84, IC95%=1.57-5.15) and negative health perception (OR=3.04, IC95%=1.19-7.78). It was concluded that functional disability was associated with modifiable health factors (scholling, overweight, depression syntoms) ans non modifiable (age, arthritis and arthrosis).

Keywords: Health Evaluation, Aged, Elderly health.

Introduction

The elderly population has been growing steadily, and as a result, it is a major challenge for public health, especially in low and middle-income countries, due to an accelerated and unorganized public policy process. This is different from high-income countries, where the process occurred slowly and gradually[1]. The aging process can trigger some chronic

noncommunicable diseases and cause functional disabilities[2] since one must consider the distinct ways in which the elderly individual adapts to the physical, social and psychological changes that occur in this stage of life[3].

Functional capacity has been defined as a multidimensional evaluation and considered an important parameter in health assessment[4]. This, in turn, reflects on the overall health status of the elderly, mainly because it includes several dimensions that interfere with senile age, such as health conditions, social relations, physical environment, socioeconomic, cultural and psychological conditions[5].

The difficulty of amply carrying out daily activities leads elderly people to be more predisposed to weaknesses, violence, and falls and, in many cases, leads to institutionalization and, early death. Furthermore, a functional disability brings complications of long-stay and high cost for health services[6]. Therefore, research on functional capacity in the elderly is essential to identify the groups most exposed to this outcome and successful health practices that favor active and healthy aging.

The prevalence of functional disability in national studies ranged from 26.9% to 45.6%[2]. Such results must be analyzed with caution due to the different instruments used to measure functional capacity. Also, it was possible to observe that the functional disability was more present in the female[7,8], older in age[5,9], low schooling[10], low monthly income[2], chronic diseases[11], and low levels of physical activity[12]. In the literature, no evidence was found regarding the prevalence and factors associated with functional disability in elderly people who practice regular physical activity, and studies on this theme investigated elderly people living in the community.

Given the above, the prevalence of functional disability in the elderly is worrisome, due to its relation with possible physical limitations and interference on the performance of social roles, often leading to a dependency on the performance of daily life activities. Therefore, conducting studies in different regions of the country can help to understand which factors are associated with the functional disability of the elderly, considering that this is an important health indicator and may contribute to interventions in this population, aiming to reduce the risk of future dependence, complication or establishment of chronic diseases and morbidities. In this sense, the present study aims to verify the prevalence and factors associated with the functional disability of elderly women participating in a physical activity program in Manaus-AM.

Methods

Study characterization

This was a cross-sectional study carried out in the second half of 2017. Elderly participants who participated in a regular physical activity program developed fifteen years ago in Manaus, Amazonas.

Population and sample

The study population comprised of 1,034 elderly women, who were regularly enrolled and had a minimum of six months of Parque Municipal do Idoso (PMI) participation. For the sample calculation, the procedures suggested by Luiz e Magnanini[13] were used, considering a confidence level of 1.96, a 95% confidence interval, a tolerable error of five percentage points, an estimated prevalence of 50% (unrecognized outcome), a delineation effect of 1.5, and a 10% proportion necessary to compensate for possible losses, thus requiring a sample of 462 elderly women.

Elderly people aged 60 or over, regularly enrolled in the PMI and with participation of at least six months in one of the proposed activities were considered eligible. The elderly who

had the following characteristics were excluded: presence of some cognitive limitation that prevented the elderly from answering the questionnaire, frequency below 75% in physical activities.

Characteristics of the Parque Municipal do Idoso

The Programa Conviver ate Parque Municipal do Idoso is one of the actions developed by Fundação Doutor Thomas, created in 1909, which was recognized as a philanthropic institution by Manaus City Council in 1967. The Program is located in the neighborhood Nossa Senhora das Graças (south-central area), Manaus/AM. It benefits approximately 1,700 elderly people (aged 60 or over) from all areas of the city with physical, labor, recreational, cultural activities, associated with citizenship education. Among the practices offered, water gymnastics, swimming, gymnastics, stretching, solo Pilates, yoga, elaborate gymnastics, and ballroom dancing stand out. The elderly can participate in activities two to four times a week, being allowed to engage in up to two activities a day[14].

Variables

The functional disability dependent variable was assessed by using the *Multidimensional Functional Assessment Questionnaire* – BOMFAQ adapted from the *Old Americans Resources and Services* (OARS) questionnaire and validated in Brazil[15]. The instrument is composed of 15 questions, six of which are Basic Activities of Daily Living (BADLs) (lay/get up from bed, eat, walk on the floor, bathe, dress and go to the bathroom when you feel like it and in time) and nine Instrumental Activities of Daily Living (IADLs) (grooming, climb a flight of stairs, take medicines on time, walk close to home, shop, prepare meals, cut toenails, get off the bus or taxi and clean the house). The answers were divided into four categories: no difficulty (0), little difficulty (1), a lot of difficulties (2) and did not perform (3). These were later categorized into two: functional capacity (independence or impairment of 1 to 3 Daily Life Activities (DLAs) and functional disability (impairment in 4 or more DLAs.

Information on age (in full years: 60-69, 70-79, 80-100), civil status (with/without partner), monthly income (minimum wage of R$ 937.00 in 2017) stratified in tertiles (<R$1,250, between R$1,250 and R$3,000, >R$3,000), schooling (illiterate, incomplete primary, complete primary, incomplete secondary, complete secondary and university), participation´s time int the program stratified in tertiles (<3 years, between 3 and 6 years,> 6 years), retirement (no, yes), medication use (no, yes), self-reported illnesses: stroke, arthrosis, arthritis, osteoporosis, dyslipidemia (no, yes). Body mass index (BMI) was calculated using measures of body mass in kilograms and height in meters, which was classified as low weight (≤ 22 kg/m^2), eutrophic (between 22 and 27 kg/m^2) and overweight (≥ 27 kg/m^2)[16]. Because there is no elderly woman with dependence on functional capacity in the low weight category of BMI, it was decided, for purposes of analysis, to group the low weight category with the eutrophic category.

Depression symptoms were verified using the Geriatric Depression Scale (GDS) containing 15 questions[17]. GDS was categorized in the absence of symptoms (score equal to or less than five points) and the presence of symptoms (score greater than or equal to six points). Health perception was verified using the question: "*In general, would you say that your health is?*". The response options were: excellent, very good, good, bad, and very bad. The categories excellent, very good and good formed the positive health perception category, while bad, very bad formed the negative health perception category.

Statistical analysis

Data were analyzed using descriptive analysis (relative and absolute frequency distribution) and inferential analysis. The association between the variables was verified by chi-

square or Fisher's Exact test. Logistic regression analysis was used to identify the possible factors associated with a functional disability using hierarchical analysis, using crude and adjusted analysis. The independent variables were organized according to the following hierarchical model: 1st block – age, monthly income, marital status, retirement, schooling; 2nd block – medication use, BMI; 3rd block – depression symptoms, self-reported illnesses (heart disease, stroke, arthrosis, arthritis, osteoporosis, dyslipidemia); 4th block – health perception. The variables that presented $p > 0.20$ in the adjusted analysis were excluded from the model. The IBM SPSS *Statistics* version 20.0 statistical package was used, with a significance level of 5%.

Data collection procedures

The research project was approved by the Committee of Ethics in Research with Human Beings (CEPSH) of Santa Catarina State University (Protocolo number: 2.183.785/2017). A meeting was held with the elderly in the auditorium of the PMI, to inform them about the objectives and methodological procedures of the research. Those who were willing to participate voluntarily were given the Free and Clarified Consent Term (FCCT) to sign. The questionnaires were applied in the form of an interview, in an air-conditioned room of the PMI by the researcher herself.

Results

The initial total sample consisted of 526 elderly, however, elderly men were excluded due to the small number of individuals (n = 57), resulting in 469 elderly women. Still, elderly women with cognitive impairment (n = 53) were excluded. In this sense, 416 elderly women were considered eligible for statistical analysis. Most of the elderly women were between 70-79 years old (48.8%), had no partner (67.3%), had a monthly income higher than R$ 3,000 (37.0%), had completed secondary school (36.1%) and were retired (89.4%). It was observed that 91.8% had a positive health perception, 90.6% used medication, 50.7% were overweight and 95.0% had no depression symptoms (Table 1). The average participation´s time in the PMI was 7.14 years, ranging from one year to 15 years.

Table 1. General characteristics of elderly women participating in a physical activity program

Variables		n (%)
Age (years)	60-69	156 (37.5)
	70-79	203 (48.8)
	≥80	57 (13.7)
Marital status	With partner	136 (32.7)
	Without partner	280 (67.3)
Monthly income (in reais)	< R$1,250	124 (29.8)
	R$1,250-R$3,000	138 (33.2)
	>R$ 3,000	154 (37.0)
Schooling	Illiterate	7 (1.7)
	Incomplete primary	50 (12.0)
	Complete primary	102 (24.5)
	Incomplete secondary	11 (2.6)
	Complete secondary	150 (36.1)
	Complete university	96 (23.1)
Retired	No	44 (10.6)
	Yes	372 (89.4)
Health perception	Positive	382 (91.8)
	Negative	34 (8.2)
Medication use	No	39 (9.4)
	Yes	377 (90.6)
BMI	Eutrophic	177 (42.5)
	Low weight	28 (6.7)
	Overweight	211 (50.7)
Depression symptoms	Absence	395 (95.0)
	Presence	21 (5.0)

Note: BMI: Body mass index; n: absolute frequency; (%): relative frequency
Source: The authors

Figure 1 shows the distribution of the elderly according to the functional capacity, being verified that one in four elderly is dependent on the DLAs (25.7%). It was observed that activities such as climbing stairs (n = 28 - 6.7%), cutting toenails (n = 23; 5.5%) and cleaning the house (n = 12; 2.9%) were those that the elderly women had a lot of difficulty doing. In addition, it was noted that the activities that the elderly women did not perform were cutting toenails (n = 104; 25%) and cleaning the house (n = 72; 17.3%) (data not shown in the table).
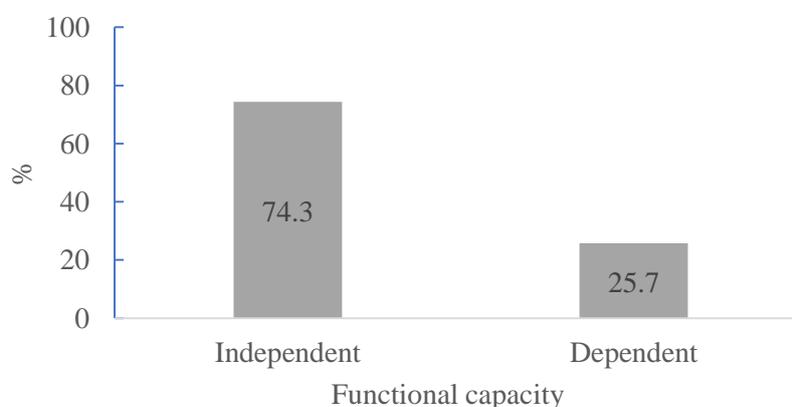
Figure 1. Distribution of elderly women participating in a physical activity program, according to functional capacity
Source: The authors

Table 2 shows the association, through the chi square test, of the functional capacity with the independent variables.

Table 2. Association between functional capacity, sociodemographic and health variables of elderly women participating in a physical activity program

Variables		Functional capacity n (%)	Functional disability n (%)	p-value
Age (years)	60-69	131 (42.4)	25 (23.4)	<0.001[†]
	70-79	145 (46.9)	58 (54.2)	
	≥80	33 (10.7)	24 (22.4)	
Participation´s time in the PMI (years)	<3	116 (37,5)	29 (27,1)	0,060
	3-6	49 (15,9)	14 (13,1)	
	≥6	144 (46,6)	64 (59,8)	
Marital status	With partner	110 (35.6)	26 (24.3)	0.032[†]
	Withoutpartner	199 (644)	81 (75.7)	
Monthly income (in reais)	<R$1,250	85 (27.5)	39 (36.4)	0.064[†]
	R$1,250-3,000	100 (32.4)	38 (35.5)	
	> R$ 3,000	124 (40.1)	30 (28.0)	
Schooling	Illiterate	5 (1.6)	2 (1.9)	0.003[‡]
	Incomplete primary	31 (10.0)	19 (17.8)	
	Complete primary	66 (21.4)	36 (33.6)	
	Incomplete secondary	7 (2.3)	4 (3.7)	
	Complete secondary	117 (37.9)	33 (30.8)	
	Complete university	83 (26.9)	13 (12.1)	
Retired	No	39 (12.6)	5 (4.7)	0.021[†]
	Yes	270 (87.4)	102 (95.3)	
Health perception	Positive	297 (96.1)	85 (79.4)	<0.001[†]
	Negative	12 (3.9)	22 (20.6)	
Medication use	No	35 (11.3)	4 (3.7)	0.020[‡]
	Yes	274 (88.7)	103 (96.3)	
BMI	Eutrophic	143 (46.3)	34 (31.8)	<0.001[‡]
	Low weight	28 (9.1)	0 (0.0)	
	Overweight	138 (44.7)	73 (68.2)	
Depression symptoms	Absence	300 (97.1)	95 (88.8)	0.001[†]
	Presence	9 (2.9)	12 (11.2)	
Heart disease	No	285 (92.2)	88 (82.2)	0.003[†]
	Yes	24 (7.8)	19 (17.8)	
AVC	No	306 (99.0)	101 (94.4)	0.011[†]
	Yes	3 (1.0)	6 (5.6)	
Arthrosis	No	201 (65.0)	26 (24.3)	<0.001[†]
	Yes	108 (35.0)	81 (75.7)	
Rheumatoid arthritis	No	267 (86.4)	60 (56.1)	<0.001[†]
	Yes	42 (13.6)	47 (43.9)	
Osteoporosis	No	23 (72.2)	53 (49.5)	<0.001[†]
	Yes	86 (27.8)	54 (50.5)	
Dyslipidemia	No	233 (75.4)	69 (64.5)	0.029[†]
	Yes	76 (24.6)	38 (35.5)	

Note: PMI: Parque Municipal do Idoso; BMI: body mass index; AVC: stroke; n: absolute frequency; (%): relative frequency, [†] Chi-square test. [‡] Fisher exact
Source: The authors

These results indicate an association between functional capacity and all independent variables, with the exception of family income. Elderly women aged 70-79, without a partner, with a family income of less than R $ 1250.00, with complete elementary school and retirees have a higher prevalence of functional disability. In addition, those with positive health perception, without chronic diseases (heart disease, stroke, rheumatoid arthritis and dyslipidemia) had a higher frequency of functional disability. Still, it was observed that the elderly women with positive health perception, overweight, without depressive symptoms, with osteoarthritis and osteoporosis were the most prevalent in relation to functional disability. There was no association between functional capacity and time of participation in the PMI and family income.

As shown in Table 3, among the investigated variables, age, monthly income, schooling, retirement, medication use, overweight, depression symptoms, heart disease, stroke, arthrosis, rheumatic arthritis, osteoporosis, dyslipidemia, and negative health perception were associated with functional disability (Table 3). After adjustment, it was observed that the groups of older women most exposed to functional disability were those aged 80 years or older (OR= 2.34, IC95%= 1.11-4.94), incomplete primary schooling (OR= 3.22, IC95%= 1.24-8.35) and complete primary (OR= 3.24, IC95%=1.40-7.50), overweight (OR= 2.77, IC95%= 1.69-4.54), with the presence of depression symptoms (OR= 4.40, IC95%= 1.48-13.07), with arthrosis (OR= 3.31, IC95%= 1.80-5.73), rheumatoid arthritis (OR= 2.84, IC95%= 1.57-5.15) and negative health perception (OR= 3.04, IC95%= 1.19-7.78).

Table 3. Crude and adjusted analysis of the association between functional disability and sociodemographic factors, diseases, health perception, depression symptoms in elderly participants of physical activity program

Variables		Crude analysis OR (IC95%)	Adjusted analysis OR (IC95%)
Age (years)[1]	60-69	1	1
	70-79	2.10 (1.24-3.54)	1.62 (0.92-2.84)
	≥80	3.81 (1.94-7.51)	**2.34 (1.11-4.94)**
Marital status[1]	With partner	1	-
	Without partner	1.72 (1.05-2.84)	-
Monthly income[1]	<R$1,250	1.90 (1.09-3.29)	-
	R$1,250- R$3,000	1.57 (0.91-2.71)	-
	> R$3.000	1	-
Schooling[1]	Illiterate	2.55 (0.45-14.56)	1.76 (0.27-11.36)
	Incomplete primary	3.91 (1.73-8.86)	**3.22 (1.24-8.35)**
	Complete primary	3.48 (1.71-7.10)	**3.24 (1.40-7.50)**
	Incomplete secondary	3.65 (0.94-14.22)	3.00 (0.71-12.67)
	Complete secondary	1.80 (0.89-3.63)	1.81 (0.78-6.20)
	Complete university	1	1
Retired[1]	No	1	1
	Yes	2.95 (1.13-7.68)	2.79 (0.89-8.71)
Medication use[2]	No	1	1
	Yes	3.29 (1.14-9.48)	2.35 (0.77-7.17)
BMI[2]	Low weight/eutrophic	1	1
	Overweight	2.66 (1.67-4.23)	**2.77 (1.69-4.54)**
Depression symptoms[3]	Absence	1	1
	Presence	4.21 (1.72-10.30)	**4.40 (1.48-13.07)**
Heart disease[3]	No	1	-
	Yes	2.56 (1.34-4.90)	-
AVC[3]	No	1	1
	Yes	6.06 (1.49-24.67)	4.37 (0.72-26.51)
Arthrosis[3]	No	1	1
	Yes	5.80 (3.52-9.56)	**3.31 (1.80-5.73)**
Rheumatoid arthritis[3]	No	1	1
	Yes	4.98 (3.02-8.22)	**2.84 (1.57-5.15)**
Osteoporosis[3]	No	1	1
	Yes	2.64 (1.68-4.16)	1.62 (0.93-2.83)
Dyslipidemia[3]	No	1	1
	Yes	1.69 (1.05-2.71)	1.55 (0.86-2.77)
Health perception[4]	Positive	1	1
	Negative	6.41 (3.05-13.47)	**3.04 (1.19-7.78)**

Note: BMI: Body mass index; AVC: Stroke; OR: *Odds ratio;* IC:95% confidence interval. 1st block: age, retirement, schooling; 2nd block: medication use, BMI; 3rd block: depression symptoms, (Stroke, arthrosis, arthritis, osteoporosis, dyslipidemia); 4th block: health perception. *Hosmer and Lemeshow* adherence test = 0.898
Source: The authors

Discussion

In this study, it was evidenced that the factors associated with functional disability were socio-economic aspects, such as advanced age and low level of schooling; health conditions such as the presence of depression symptoms, arthrosis and rheumatoid arthritis, being overweight, and negative health perception. Most of the elderly are between 70-79 years of age, with no partner, with a monthly income above R$3,000 reais, retirees and with full secondary education. They present positive health perception, use medications, are overweight and lack depression symptoms.

It is noteworthy that the elderly women investigated in the present study have a different level of education and income than the majority of Brazilian elderly people demonstrated in other studies[2,8,10]. The elderly women who earn more than R$ 3 thousand/month, 50% of them have completed higher education, while those who receive up to R$ 1,250 reais per month, 44.5% studied up to complete elementary school and among those who receive from R$ 1250 a R$ 3 thousand per month, 49.3% studied until high school. Therefore, the high level of schooling and income observed in the elderly reflects better possibilities of access to the school and jobs occupied by them, which leads to better income and a more positive perception of life. With these characteristics they seek improvements in this stage of life, either through physical activity or work and cultural activities, often contributing to the reduction and/or absence of depression symptoms, in the most positive health perception and even though they present some chronic disease, these are controlled with medication.

The results demonstrated functional disability in 25.7% of the elderly women. These findings are in line with international studies conducted in some cities in Latin America, which presented a prevalence of functional disability of 28.7% in Buenos Aires, 31.8% in Santiago, and 28.6% in Mexico City[18]. In the national scenario, studies indicated a functional disability of 26.9% in São Carlos-SP[7], and 45.6% in Teresina-PI[2]. These results are worrying due to the relationship between functional disability and loss or reduction in the physical aspect, besides a greater dependence on and reduction of social relations[19]. It should be noted that the elderly women investigated in the studies were not regular physical activity, or at least, there was no report on this. In this sense, caution is needed when extrapolating data due to the particularity of elderly who have been practicing physical activity for at least seven years, which justifies, in part, the presence of functional disability in one of five elderly women investigated.

Older women ($\geq$ 80 years of age) were more likely to present functional disability. Similar results were found in international studies as observed in Coimbra/Portugal[8] and national studies such as those conducted in São Geraldo-MG[20], and Teresina-PI[2]. These results show that age increase is an important risk factor for dependence on functional capacity, since the reduction of muscle mass, bone and balance are inherent to the aging process, which may interfere in the reduction of mobility and the increased risk of falls, which consequently interfere with the functional capacity of the elderly. Besides, the elderly tends to decrease the level of physical activity over time, which contributes to the reduction of strength and muscular endurance[21].

In the present study, a higher prevalence of functional disability among the elderly women with incomplete and complete primary education was observed. Low schooling linked to lower income may result in the appearance of chronic diseases and negative health perception, resulting in a lower percentage of independent elderly persons.

The presence of depression symptoms was also associated with functional disability. Depression symptoms are frequent in the elderly population, especially among women and those with low schooling[22]. The appearance of these symptoms can be justified, in parts, by social isolation, loss of family members and retirement[23].

In the present study, the elderly women who self-reported arthrosis and rheumatoid arthritis were more likely to present functional disability than the elderly women who did not report diseases. These diseases are more prevalent among older women[8], a fact confirmed in the present investigation, mainly because it is in this stage of life that rapid bone loss occurs at the time of menopause, in addition to calcium deficiency, another factor related to aging[8], having to also consider that, these chronic diseases cause functional disability and a consequent reduction of the quality of life.

Overweight women were more likely to have a functional disability. Studies conducted in Pennsylvania-USA[24] presented similar results. Overweightness interferes with the elderly's well-being and may lead to functional decline[12]. Besides, being overweight increases body overload, making it difficult to move the body and stressing the muscles and joints, facilitating the appearance of functional disabilities[12].

Regarding health perception, this is a variable that reflects a perception of the individual in the biological, social and psychosocial dimensions. The elderly of the present study with negative health perception had a greater chance of functional disability in relation to those with positive health perception. One possible justification is related to the sociodemographic aspects, such as low schooling and income, which consequently does not benefit in the control and prevention of health, causing the appearance of chronic diseases, and consequently, interfering negatively in the health evaluation. In addition, negative health perception usually results from the presence of morbidity and limitations in achieving daily activities.

The participation time of the elderly women in the program is approximately seven years (range, one to 15 years). There was no association between functional capacity and time of participation in the program, however, it was observed that elderly women with functional disability have been in the program for more than 6 years. This finding may be related to the fact that older elderly women (70-79 and 80 years old or more) are the ones who have been in the program for the longest time. This reveals that it is not the time of participation in the physical activity program that interferes with functional capacity, but age, and this is characterized as a natural process of human aging.

The limitation observed in this study is related to the cross-sectional design, which makes temporality between the variables impossible. However, the present study investigated elderly practice of regular physical activity in a capital in the northern region, revealing the prevalence and the groups most exposed to functional disability, which may contribute to a better intervention and improvement of the intervention strategies for this age group, due to the scarcity of research in this region of the country.

Conclusion

The results of this study point to an association between functional disability at 80 years of age and above, low schooling, overweight, arthrosis and, rheumatoid arthritis, presence of depressive symptoms and negative perception of the health of elderly women participating in a physical activity program in Manaus. These variables, because they are mostly modifiable, can be reduced or maintained through actions of health promotion and prevention, aiming at reducing or delaying the appearance of functional disabilities in the elderly population.

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