164 - THE STRENGTH TRAINING INFLUENCE ON ELDERS FUNCIONAL CAPACITY

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INTRODUCTION:

Actually could be verified increases in Brazilians population life expect analyzing variations, since 1980 from 2050, of 62.97 to 73.59 (IBGE, 2008). Communities witch affirms that has longevity average uncommon are up for discussion inside potential life cycle maximum (maximum age that an individual can reach) and typical (average age) of its population, that is, there is an increase in both the maximum and the mean age (Shephard, 2003). In the elderly, the contraindications to exercise are not different from those applied to younger, healthier adults. In general, frailty or extreme age is not a contraindication to exercise (Mazzeo et al., 1998).

Physical activity is now recognized as an important factor promoting health in all ages (Santarém, 2007). It is necessary to measure very carefully the incentives offered training in the elderly. For to this, they promote changes in current demands of the body of the individual, ie, the specific structural changes to the incentives offered. These special arrangements must meet the needs of daily life. In order to increase the functionality of the individual, making it more able to perform these activities.

Over the last ten years has proven that the program of Strength Training can bring a considerable amount of benefits for the elderly, making sure that gains in strength and increased functional capacity related to the quality that a person has to perform activities of daily living (FLECK; Kraemer, 1999). This study aims to: a) show the benefits of strength training for improving functional capacity, b) analyze the influence of the strength training the elderly; c) a comparative analysis of the influence of training on functional capacity of elderly people who practice strength training and older people who practice it.

METHODOLOGY

This study subjects the elderly, residents of the metropolitan area of Belém do Pará criteria for inclusion of subjects in the study were: a) that they not fit an age of sixty (60) to 80 (eighty) years age of both sexes, b) were classified as physically independent elderly, according to the classification of Spirduso (1995). As this study is to compare the levels of functional ability of elderly people who do strength training with elderly people who do not practice such an exercise, the sample is composed of two groups (group A and group B). Our Group is composed of individuals who practice strength training to more than 6 (six) months, so assiduous in the Laboratory of resistive (LERES), with a maximum of two consecutive weeks of absence. There are no restrictions on participation of older people with or without any pathology in this study. Taking into account that people who train in LERES present a medical certificate for physical activity as your item in the registration in the extension project the group B is composed of individuals who practice strength training and are not sedentary. They gather in the Church of the Foursquare Gospel Canudos-I (IEQ) in the neighborhood of Tubes. But they can perform some other physical activity. As in group A, there are no restrictions on participation of older people with or without any pathology in this study. This study meets the standards for the conduct of human research, as directed by the National Health Council, in compliance with the guidelines and standards for research involving human subjects, with effect from October 10, 1996, Resolution No. 251. The same that has a comparative character, and was approved by the Ethics in Research (CEP), CAAE - 0024.0.412.000-09, State University of Pará (UEPA - CAMPUS III), in Belém do Pará

This study used a protocol, despite being scarce in the literature, focused on the evaluation of elderly physically independent. To assess the functional capacity of the research sample was applied to the protocol of the Group of Latin American Development to Maturity (GDLAM) (ANDREOTTI; OKUMA, 1999, Guimarães et al., 2008). The assessment instruments for the testing were: Clock Timer (Lerner), Chair of Support (UNIMEC) with 45 inches of seat height to the ground, 2 mattresses (FITC), 2 cones (PLASTIC ATHLETIC) tape of 7.5 meters (TRAMONTINA) and T-shirt G (MIZUNO).

The same is the achievement of five tests, which are considered necessary requirements for the evaluation of activities of daily living of an elderly person. The five tests were: walking 10 meters (C10M) (Guimarães et al., 2008), they rose from the sitting position (LPS) (Guimarães et al., 2008), rising from a chair and moving around the house (LCLC) (ANDREOTTI; OKUMA, 1999), rising from a prone position (LPDV) (Guimarães et al., 2008), dress and take off his shirt (VTC) (MENESES et al., 2007). The protocol was applied GDLAM this battery of tests, because it has a good applicability, a similar relationship with the activities of daily living. The tests were applied, respectively, in this order: Walk 10 meters (C10M), the purpose of this test is to evaluate the speed that the individual takes to go the distance of 10 meters. We used a measuring tape to measure the space of ten (10) meters in the room, and lined with ribbons that area.

Getting out of position (LPS), this test aims to assess the functional capacity of the lower end, the individual gets up and sits five times consecutively, starting from sitting in a chair without arm support, with the seat a a ground clearance of 50 cm. This test is used office chair with 45 (forty five) inches in height, the seat to the ground. Rising from his chair and moving around the house (LCLC), the objective is to evaluate the ability of the elderly on agility and balance. With an office chair 45 (forty-five), the seat height to the ground, laying on it, should demarcate two cones diagonally to the chair, at a distance of four meters to three meters behind and to the right and left sides the same. To mark the points where the cones were in place, we used a tape measure. When the individual must sign up, move right, circling the cone, back to the chair, sit back and take both feet off the ground, soon after getting up and doing the same for the left side, the individual must to two turns in each cone to complete the test.

Rising from the prone position (LPDV) The purpose of this test is to evaluate the individual's ability to rise from the ground. The test consists of: starting from initial position in the prone positioned on two mattresses on the floor with your arms at your sides, the signal, the individual must stand up, standing up as soon as possible. Don't and take off his shirt (VTC), this test is to assess the functional autonomy of the upper limbs by measuring the time required to wear a shirt and take. The individual must stand with your arms at your sides and with a T-Shirt size "G" in one hand (the dominant side). By the way, he should wear the shirt and immediately remove it, returning to starting position. From the testing are collected the data to be released in a formula

GDLAM Index (GI), which is expressed by the equation:

$$IG=\frac{[(C10m + LPS + LPDV + VTC) \times 2] + LCLC}{4}$$

These scores can be classified with the concepts: Poor, Fair, Good, Very Good According to this guidelines:

Table 1 - Classification of the score according GDLAM Index (GI)

CLASSIFICATION	IG (Scores)
Weak	+27,42
Regular	27,42-24,98
Good	24,97-22,66
Very Good	- 22,66

Table 2 - Classification of tests in accordance with the scores

STANDARD ASSESSMENT OF FUNCTIONAL AUTONOMY PROTOCOL GDLAM					
	TESTS				
Scores	C10M	LPS	LPDV	VTC	LCLC
Weak	+ 7,09	+11,19	+4,40	+ 13,14	+ 43,00
Regular	7,09-6,34	11,19-9,55	4,40-3,30	13,14-11,62	43,00-38,69
Good	6,33-5,71	9,54-7,89	3,29-2,63	11,61 -10,14	38,68-34,78
Very Good	- 5,71	- 7,89	- 2,63	- 10,14	- 34,78

To perform the statistical analysis used the statistical package BioEstat 5.0 Ayres, 2007. Where we used descriptive statistics to characterize the sample. We applied the Student t test to compare the measures and Pearson correlation to determine the association between the variables. This treatment was adopted a significance level of $p \leq 0.05$.

RESULTS AND DISCUSSION

Table 3 - Descriptive statistics and Student t test between the study groups.

Variable	With S. Training	Without S. Training	T	p
Age	68.50 ± 4.66	77.17 ± 12.70	-1.62	0.17
Practice of Strength Training	1.88 ± 0.88	-----	-----	-----
W10m	8.03 ± 1.12	9.95 ± 2.98	-1.52	0.19
GSP	8.82 ± 1.71	12.82 ± 3.61	-3.24	0.01*
GBDP	36.38 ± 3.65	44.52 ± 21.71	-0.91	0.40
GCWH	3.57 ± 0.89	9.13 ± 3.35	-4.00	0.01*
WTB	12.56 ± 3.26	17.22 ± 3.76	-2.72	0.02*
GDLAM Index	25.55 ± 3.18	34.64 ± 10.64	-2.05	0.10

W10m, walk 10m; GSP, get up of seated position; GBDP, get up of belly decubitus position; GCWH, get up of the chair and walk through the house; DTB, dress and take off a blouse; values in seconds; IG: GDLAM index (values in scores).

In table 3 it is observed that the group did not practice strength training is a very heterogeneous group, while the group of regular strength training is very homogeneous, except for the time of exercise training with weight, and LPDV VTC. Table 3 also allows to observe that the group of regular strength training is more functionally fit than the group of non-practicing, but this difference is not significant from a statistical standpoint. This result may have been caused by the fact that individuals of group B, who did not engage in strength training, are not sedentary. And do some kind of physical activity.

This finding could have another outcome if there were not inherent in the research. Due to shortages of group B, which did not engage in strength training. At the end of the evaluations were recorded twelve (12) people in group A, those who practice strength training and 6 (six) people in group B, who did not practice strength training, but not being sedentary.

Chart 1 - Classification of subjects by level of functional ability in each sample group.

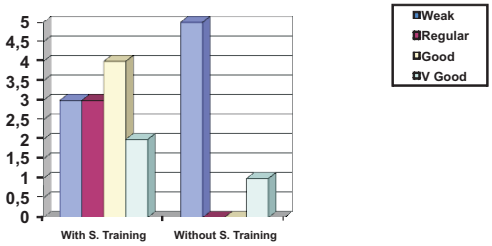


Table 4 - Qualitative characteristics of the sample.

Variable	With S. Training				Without S. Training			
	Female		Male		Female		Male	
Gender	9 (75.00%)		3 (25.00%)		6 (100.00%)		0 (0.00%)	
	Without		With		Without		With	
Restrictions	8 (66.67%)		4 (33.33%)		2 (33.33%)		4 (66.67%)	
	Weak	Regular	Good	V.Good	Weak	Regular	Good	V. Good
Class. Index	3	3	4	2	5	0	0	1
	25.0%	25.0%	33.3%	16.7%	83.3	0%	0%	16.7%

Regarding the classification of subjects for the level of functional capacity, it was found that the group of regular weight training met in the operating conditions more favorable than that of non-practicing, but it was found that 50% of the subjects were at a level of good to very good, while only 16.7%, of non-practitioners, had a very good level of functional capacity. However, the study by Pereira et al. (2005), found that the sample, in general, was classified as a GDLAM index (GI), weak. Guimaraes et al. (2008), in his research found that the groups had IG, weak.

FINAL REGARDS

In this study, we analyzed the elderly physically independent in accordance with a functional classification of Matsudo (2004). Showing that elderly practitioners of Strength Training, regular, with a training period over 6 (six) months tend to have lower functional capacity greater than elderly non-practicing Strength Training Using the protocol as a method GDLAM evaluation. Analyzing a protocol that has 5 (five) tests, 3 (three) tests showed significant differences between the group that practiced (group A) and the group that did not engage in strength training (group B). In tests LPS, LPDV VTC and the group A reached scores significantly better than in the group B. This confirms what is already scientific knowledge. Demonstrating that strength training develops strength gains, power and muscle mass. This allows the elderly to perform activities of daily living such as getting up, go a certain route efficiently and dressing, despite the functional declines that are evident in the aging process. Corroborating the hypothesis that strength training is an effective method to improve the functional capacity of an elderly physically independent.

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THE STRENGTH TRAINING INFLUENCE ON ELDERS FUNCIONAL CAPACITY

This study has the objective to analyze, in comparative form, the functional capacity of physically independents elders that practice strength training at Laboratório de Exercício Reistido e da Saúde (GRUP A), with another elders grup that don't practice this kind of physical exercise but aren't sedentary (GRUP B). This grups are composed by both sex persons, shared in GRUP A, with a age average of 68.50 ± 4.66 and the GRUP B with avarage of 77.17 ± 12.70 years old. It was used the Grupo de Desenvolvimento Latino-Americano para a Maturidade GDLAM's protocol to evaluate the sample functional capacity, doing 5 (five) tests: W10m, walk 10m; GSP, get up of seated position; GBDP, get up of belly decubitus position; GCWH, get up of the chair and walk through the house; DTB, dress and take off a blouse. Analyzing the results, couldn't be verified functional capacities scores with significant differences between the by statistical point of view. However this difference isn't significant by the statistical point of view, analyzing on qualitative form can be observed that the GROUP A possess a functionally bigger than GROUP B.

L'INFLUENCE DE LA FORCE DE FORMATION SUR LA CAPACITÉ FONCTIONNELLE DES PERSONNES ÂGÉES. UNE ANALYSE COMPARATIVE.

Cette étude vise à examiner, de manière comparative, la capacité fonctionnelle des personnes âgées physiquement indépendants qui pratique la musculation au Laboratoire de résistive exercice et de santé (groupe A), avec un groupe de personnes âgées qui ne pratiquent pas ce type de exercice, mais les mêmes ne sont pas sédentaires (groupe B). L'échantillon était composé d'individus des deux sexes ont été divisés en un groupe, avec un âge moyen de 68,50 ± 4,66 et le groupe B avec une moyenne de 77,17 ± 12,70 années. Pour évaluer et comparer la capacité fonctionnelle, nous avons utilisé le protocole du Groupe latino-américaine de développement à l'échéance (GDLAM) ont été utilisés dans les 5 (cinq) des tests: C10M, marcher 10m; LPS: lever de la position assise; LPDV , passant d'une position couchée, LCLC, passant d'une chaise et se déplacer dans la maison, VTC, et de prendre une chemise de soirée. Analyse des résultats, il a été constaté que les scores obtenus par les individus, les deux groupes avait pas de différence statistiquement significative en ce qui concerne la capacité fonctionnelle. Bien qu'il y ait eu une différence significative entre les groupes, sous le point de vue statistique, on peut voir que le point de vue qualitatif, le groupe a les plus hauts standards de la capacité fonctionnelle par rapport au groupe B.

LA INFLUENCIA DEL ENTRENAMIENTO DE FUERZA EN LA CAPACIDAD FUNCIONAL DE ANCIANOS. UN ANÁLISIS COMPARATIVA.

El presente estudio tiene como objetivo de analizar, de forma comparativa, la capacidad funcional de individuos ancianos físicamente independientes que practican entrenamiento de fuerza en el Laboratório de Exercício Resistido e da Saúde (GRUPO A), con un grupo de ancianos que no practican este tipo de ejercicio físico, sin embargo los mismo no se encuentran sedentários (GRUPO B). La muestra fue compuesta por individuos de ambos sexos, siendo divididos en un GRUPO A, con una media de edad de 68.50 ± 4.66 y un GRUPO B con media de 77.17 ± 12.70 años. Para evaluar y comparar la capacidad funcional fue utilizado el Protocolo del Grupo de Desarrollo Latino-Americano para la Madurez (GDLAM) en que fueron utilizados 5 (cinco) pruebas: C10m, caminar 10m; LPS: levantarse de la posición sentada; LPDV, levantarse de la posición decúbito ventral; LCLC, levantarse de la silla y locomover-si por la casa; VTC, vestir y quitar una camiseta. Analizando los resultados, verificou-se que os escores obtidos pelos indivíduos, de ambos os grupos, não tiveram diferença estatisticamente significante, no que se refere à capacidade funcional. Aunque ha habido una diferencia significativa entre los grupos, bajo el punto de vista estadístico, se puede ver que el punto de vista cualitativo, el grupo tiene el más alto grado de capacidad funcional en relación con el grupo B.

A INFLUÊNCIA DO TREINAMENTO DE FORÇA NA CAPACIDADE FUNCIONAL DE IDOSOS. UMA ANÁLISE COMPARATIVA.

O presente estudo tem como objetivo de analisar, de forma comparativa, a capacidade funcional de indivíduos idosos fisicamente independentes que praticam treinamento de força no Laboratório de Exercício Resistido e da Saúde (GRUPO A), com um grupo de idosos que não praticam este tipo de exercício físico, porém os mesmo não se encontram sedentários (GRUPO B). A amostra foi composta por indivíduos de ambos os sexos, sendo divididos em um GRUPO A, com uma média de idade de 68.50 ± 4.66 e um GRUPO B com média de 77.17 ± 12.70 anos. Para avaliar e comparar a capacidade funcional, foi utilizado o Protocolo do Grupo de Desenvolvimento Latino-Americano para a Maturidade (GDLAM) em que foram utilizados 5 (cinco) testes: C10m, caminhar 10m; LPS: levantar-se da posição sentada; LPDV, levantar-se da posição decúbito ventral; LCLC, levantar-se da cadeira e locomover-se pela casa; VTC, vestir e tirar uma camiseta. Analisando os resultados, verificou-se que os escores obtidos pelos indivíduos, de ambos os grupos, não tiveram diferença estatisticamente significante, no que se refere à capacidade funcional. Apesar de ter ocorrido uma diferença significativa entre os grupos, sob o ponto de vista estatístico, pode-se verificar que do ponto de vista qualitativo, que o GRUPO A possui maiores padrões de capacidade funcional em relação ao GRUPO B.

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