

## 30 - THE INTERFERENCE OF RECREATIONAL PHYSICAL ACTIVITY IN THE MATURE AND OLD PEOPLE TO PERFORM EVERYDAY PHYSICAL ACTIVITIES.

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### 1 INTRODUCTION

The geriatric fraction accounts for the segment of the population that has grown most in the world, in the last decades of the XX century and the beginning of the XXI. Within 30 years it will represent a round 40% of the population of Germany, Japan and Italy (GEIS, 2003).

For a better understanding of the phenomenon of ageing is necessary a further study on the The geriatric fraction. In order to do that we tried to have a better understanding on the elderly population and its formal classification before the entities that carry out studies on them.

The world health organization, for instance, proposes the elderly classification in three categories as follows:

Pre-elderly (55-64 years old)

Young elderly (65-79 and 60-69, for the ones who live in Asia and Pacific region and South America);

Elderly of advanced age (+75 or 80 years old, being that the ones over 80 years old, are mostly women) (GEIS, 2003).

In Heidelberg in Germany (1996), The world health organization, along with EGRAPA (European group for the physical activity for the elderly investigation) presented an open letter for the health policy and quality of life for the elderly, being the age of 50 as a reference (BARBOSA, 2000).

The advance of the age and the ageing are associated with several physiological alterations and not desired by the beings. According to Pickles (2000), we can mention the reduction of functional reserves in the body: muscular, bones, nerves, lungs, circulation, endocrine and immunologic, which varies from one person to another, and can influence directly the capacity to perform some sorts of AVD's everyday activities - (PAPALÉO NETTO, 1996; GUCCIONE, 2002).

According to Okuma and Andreotti (1999), one of the elements that determine the expectation of healthy and active life is the independence to perform everyday activities, if the health is endangered these activities can be more difficult to perform, making the elderly dependent on other people or on some sort of medical, psychological or social assistance (OKUMA, 1998). Since then, various tests started to be created, from the simplest like hygiene cares to the most complex like how to do shopping (ANDREOTTI and OKUMA, 1999), and respectively classified as basic activities from daily life (AIVD's) (GUCCIONE, 2002).

The functional capacity is a vital factor in the analysis of the ageing effects related to health, the physical aptitude and the quality of life. The components of physical aptitude related to health are: the flexibility, the muscular strength and the heart breathing capacity (MATSUDO, 2001 *apud* PASSOS, 2002). Hence the AVD's are one of the ways to identify the quality of life of a human being, through the autonomy degree and independence which he performs everyday functions in the social economic and cultural context (GUIDI and MOREIRA, 1996 *apud* RABELO, 2002).

Several scientific publications and specialized document the advantages of the practice of physical activities (OKUMA, 1998; PICKLES 2000; BARBOSA, 2000; GEIS, 2003; FLECK and KRAEMER, 1999; McARDLE et al., 1998). As for the elderly, their regular practice contributes for their everyday independence, besides accident prevention, lesions and some diseases (BARBOSA, 2000; SANFONS, 2000; PICKLES, 2000; GEIS, 2003, FLECK and KRAEMER, 1999).

Therefore, the elderly that perform regular and systematic physical activities, in their majority, improve or keep their physical aptitude being able to improve the functional welfare, diminishing the idleness and mortality among the elderly population. In other words, they obtain significant benefits and quality of life (OKUMA, 1998; McARDLE et al., 1996; PICKLES, 2000; ACMS, 2000). These remarks, this study contributes to notice such phenomenon.

### 2 - METHODS

#### 2.1-Sample characterization

30 voluntary women took part in this study, they are voluntary of the project of extension of the maturity laboratory of the institution that contributed with the space for the realization of this research.

#### 2.2.Instruments

Three tests were carried out, part of a battery created by ANDREOTTI and OKUMA (1999), which assess the capacity of execution of everyday activities of the elderly physically independent, being: Test 1 (T1): Test to sit down and stand up from the chair and move around the house; Test 2 to put on a pair of socks and, test 3 time oneself after moving 800 metres.

The materials and equipment used in each test were:

T1: Court; warehouse; Chair (with arms), with seat of 40cm high to the floor; Chair without arms, four cones;

T2: Cotton socks; tape measure; Cronômetro; selo tape;

T3: Cones, stop watch e heart frequencemetre.

#### 2.3. Procedures

Before starting the research, the full authorization was requested by the people in charge of the physical education course of the host institution. For this sample to be done, each of the participants were given an inscription form, where all the personal data were registred (age, marital status, background, physical activity, among others, where each participant replied, as well as the respective information to their health state.

In this transverse study, the sample was paired, being assessed in two stages, split in 6 weeks. The tests were performed at the same time (09:00 h), which is important due to heart variations, likely to influence the performance of the volunteers (POWERS & HOWLEY, 1997).

The applied exercises during these 6 weeks, were activities that favoured the improvement of the coordination, flexibility (stretching), balance, heart breathing capacity and socialization. The classes took place three times a week and lasted for 2 hours.

#### 2.4. Data treatment

All the treatment and analysis of the data were carried out through the statistic program "Statistical Package for Social Sciences SPSS for Windows 11.0." utilizing the t test for dependent samples, the average, the deviation, the maximum and the minimum of time of execution of the pre and post test.

For all the tests it was taken the significance level  $p = 0,05$ .  
 The variable analysed was the time.  
 For the age of the participants was calculated the arithmetic average and the deviation.

### 2.5. Ethical cautions

The people were informed about all the procedures to be taken during the realization of the battery of tests. Before the beginning of the in-site work, the permission for the execution of the project in the institution was required. It was also delivered the letter of presentation of the project, as well as permission which was signed by the participants, and assuring the confidentiality of the collected information, except for the use in congresses and seminars that dealt with subjects to do with the elderly.

## 3 PRESENTATION AND DISCUSSION OF THE RESULTS

The results considered, firstly, the analysis of the general profile of the group (age, marital status, background, profession, familiar income, type of household, physical activity level, medical appointments, sick people). Data related to the results of the applied tests were shown afterwards.

The characterization of the group was performed through the inscription form, each participant answered it before starting the activities in the maturity laboratory of Uni-BH.

The average age of the sample is 55,6 years old, presenting a deviation of 5,2 years. As to the background, we found out that 20% of the tested studied only primary school, 30% with primary school incomplete, 20% with high school incomplete and 25% with higher education. As to salaries we verify that only 5% of the tested of the sample have incomes of 9 minimum salaries. Among the other 95% of the tested, 5% earn a minimum salary, 35% earn 2 minimum salaries, only 5% earn 3 minimum salaries, the other 10% 4 minimum salaries, and 20% earn 5 minimum salaries. 5% of the tested 6 minimum salaries, the other 5% with 7 minimum salaries, and the others with 9 minimum salaries.

Only 45% of the sample are retired. As for health insurance, 40% have private ones while 60% do not have any, from these people 90% state that they see the doctor twice a year.

All these people are physically active, but only 30% participate regularly of 3<sup>a</sup> age groups, the other 70% state that they go walking at least three times a week.

As to the marital status of the participants, 50% are married, 20% are separated, the other 20% single, and 10% widows / widowers.

The diseases or physiologic difficulties that prevailed in the studies were varicose veins and hyper tension (35,3%), followed by high cholesterol (29,4%). The depressions, the memory problems, and cramps have the frequency of 23,5% as follows, the least mentioned ones, to do with sight, hearing or with the balance system.

As to the dominant problems and/or mentioned diseases, are the pain in the legs and spine problems, both with 35,3% of frequency, being the spine problems always linked to back aches. 29,4% of the tested showed articulation problems (pains and hardness on the articulations and body segments). The same percentage is verified in people who say that they take hormones as body replacement. The arthritis, pains in the knees and fractures have 23,5% of frequency, followed by tendon strains with 17,6% frequency. 11,8% have osteoporosis. However, this data must be seen with some caution, since this sample did not involve totally people of the third age, which according to the OMS classification, start to occur from 60 years old onwards. Circulation problems and bursitis also are mentioned. Last but not least, rheumatism have 5,9% of frequency.

As for the registred results, we verified that in the "put on socks test" there was a reduction in its execution time, certainly due to the increase of physical exercises, since we verified significant differences between the pré and pos tests ( $p=0,001$ ). There was a reduction of time in the minimum and maximum in the execution of the sample before and after the application of the physical exercises. This activity needs a bigger articular mobility, through flexibility. Although it is not the specific objective of the study, we shoul outline that flexibility activities are determinant factors for the realization of the AVDs (POLLOCK, 1998; MATSUDO, 2001; HURLEY and HAGBERG, 1998; HOLLAND et al., 2002; RASO 2000 apud PASSOS, 2002).

In other two studies, Passos (2002) and Rabelo (2002), utilized this battery of tests to analyse the performance of the AVDs, after the application of the stamina and hydro gymnastics exercises, respectively, we did not see improvement in the "put on socks test", therefore, they justify that flexibility exercises were not specific in these studies and for improvement in that it is necessary to focus on the stretchers.

We noticed that there were significant improvements in the sample in the execution of the tests "sit down and stand up from the chair and move around the house" and "walk 800 metres" ( $p=0,001$ ). In the test 2 "sit down, stand up and move around the house" and in test 3 "walk 800 metres", it was possible to assess indirectly the capacity of strength and stamina of the lower limbs, the balance and the speed of walking, as well as the heart breathing capacity, which we can say that the physical activity contributed for the improvement of the referred functions.

Rabelo (2002), published a study with 62 old people in three groups, G1, G2 and GC, where the first participated in a training program of stamina 50 % of 1 RM, the second of 80% of 1 RM and the third of playful activities. It was concluded that a stamina work is more effective to promote improvement in the execution of activities like walking and sitting down and standing up then the practice of playful and recreational exercises. The GC presented only discret improvements on the "sit down and stand up from the chair" and "go up on the step". The authors concluded that specific activities of stamina exercises is more effective than playful and recreational activities in the realization of AVDs.

In the referred study, the improvement can be justified by the fact that the unactivity lead into a decline of muscular strength compromising the realization of everyday activities (SPIRDURO, 1995 apud SANTOS, 2004). We can conclude that the practice of any activity lead into na improvement of muscular strength, because it stimulates the fibres of type tipo II improving the power of the muscle to do activities like walking, sit down and stand up, as well as the heart breathing capacity (FARO JR. et al., 1996 and SANTARÉM 2000 apud RABELO, 2002).

According to Santos (2004); the reduction of the aerobics strength can be due to the decline of the muscular mass, fact that can be confirmed by Spirduso (1995); Mazzeo et al.(1998) apud Pereira; Gusmão; Bernardo; Rocha and Sá (1997), that outlines that the reduction of muscular strength lead into a reduction of physical performance, likely to interfere in heart measures, among them the maximum volume of oxygen (VO<sub>2</sub> Max.).

Another concept concerning the functional capacity and the quality of life of the elderly, according to Matsudo (2001) is of the mobility, that without a doubt, is an important element for the maintenance of the independence in this stage of life. HOLLAND et al. (2002) apud Rabelo (2002) mention that by and large, mobility is considered as the ability to move safely and independently from one point to another being extremely important for the elderly both at home and in the community.

For Matsudo (2001), mobility was determined by the walking speed and by getting up from the chair speed, activities that are parto f day-to-day life of anyone, mainly those ones affected by the ageing process.

It is also important to point out that, for Pain et al. (2000) apud Passos (2002) a program that includes aerobics exercises, balance exercises, stretches and stamina exercises, make significant improvements in the walking speed, get up from the chair and from the floor, as well as go up on steps or stairs.

#### 4 FINAL CONSIDERATIONS

Recent researches suggest that the minimum necessary for the benefits of the physical exercises for the health be confirmed (reduction of the risk of heart diseases, independence for the realization of everyday activities), is smaller than we thought previously, as the 6 week program applied, that confirms that. There is an obvious inverse relation between physical activity and death risk by activity categories, being the risk profile, reliable indicator that little exercise is always better than no exercise at all (up to a limit), is better than little. It is believed that this study have definitely contributed for the improvement of life of the participants.

Hence, it suggests that great efforts for the improvement of the public global health should be focused on the greatest number of more active people, as long as possible, because physical activity is an important element for the independence and autonomy of the elderly in general.

#### 5 REFERENCES

- AMERICAN COLLEGE OF SPORTS MEDICINE. Manual do ACSM para teste de esforço e prescrição do exercício. 5 ed. Rio de Janeiro: Revinter, 2000.
- ANDREOTTI, R.; OKUMA, S. Validação de uma bateria de testes de atividades da vida diária para idosos fisicamente independentes. Revista Paulista de Educação Física, São Paulo, 13(1): 44-66, jan./jun.1999.
- BARBOSA, R. M. Educação Física gerontológica: saúde e qualidade de vida na terceira idade. 1 ed. Manaus: Sprint, 2000.
- EVANS, J.G. Prevention of age-associated loss of autonomy: epidemiological approaches. J. Chron. Dis. 37(5): 353, 1984 *apud* PAPALÉO NETO, M. Gerontologia: a velhice e o envelhecimento em visão globalizada. São Paulo: Atheneu, 1996.
- FARO JR., M. F.; LOURENÇO, A.; BARROS NETTO, T. Alterações fisiológicas e atividade física na terceira idade. Envelhecimento e funções fisiológicas. Medicina Desportiva, 1996 *apud* RABELO, H. Os efeitos do treinamento contra resistência no desempenho nas atividades da vida diária em mulheres idosas. Brasília. Universidade Católica de Brasília 2002.
- FLECK, S.; KRAEMER, W. *Fundamentos do Treinamento de Força Muscular*. 2 ed. Porto Alegre: Artimed, 1999.
- GEIS, Pilar Pont. Atividade física e saúde na terceira idade teoria e prática. 5. ed. Porto Alegre: Artmed, 2003. Trad. Magda Schwatzhaupt Chaves.
- GUCCIONE, Andrew A. Fisioterapia geriátrica. 2. ed. Rio de Janeiro: Guanabara Koogan, 2002.
- GUIDI, M.L.; MOREIRA, M.R. Rejuvenescer a velhice: novas dimensões da vida. 2ed. Brasileira: Universidade de Brasília, 1996 *apud* RABELO, H. Os efeitos do treinamento contra resistência no desempenho nas atividades da vida diária em mulheres idosas. Brasília. Universidade Católica de Brasília. 2002.
- HOLLAND, G.J.; TANAKA, K.; SHIGEMATSU, R. NAKAGAICHI, M. Flexibility and Physical Functions of Older Adults: A Review. Journal of Aging and Physical Activity. 2002, 10, 169-206 *apud* RABELO, H. Os efeitos do treinamento contra resistência no desempenho nas atividades da vida diária em mulheres idosas. Brasília. Universidade Católica de Brasília. 2002.
- HURLEY, B. HAGBERG, J. Optimizing health in older persons: aerobic or strength?. Exer Sport Sci Reviews. 1998; 26: 61-90.
- MATSUDO, S. M. M. Envelhecimento e Atividade Física. Londrina: Midiograf, 2001 *apud* PASSOS, B. Os efeitos da hidroginástica na flexibilidade e nas atividades da vida diária em idosos. Brasília. Universidade Católica de Brasília. 2002.
- MAZZEO, S. R., CAVANAGH, P.; EVANS, J. W.; FIATAMENDES, R. A. M.; HAGBERG, J.; McAULEY, E.; STARTZELL, J. Exercício e Atividade Física para Idosos. Revista Brasileira de Atividade Física e Saúde. V. 4 (1), 20-28, 1998 *apud* PEREIRA, S. A. M.; DANTAS, E. H. M. A redução da Flexibilidade na Motricidade do Cotidiano: A influência da idade cronológica, do sexo e da atividade física. Revista Mineira de Educação Física, 6(2): 34-45, 1998.
- McARDLE, W. D.; KATCH, F.I; KATCH, V.L. Fisiologia do exercício: energia, nutrição e desempenho humano. 4 ed. Rio de Janeiro: Guanabara Koogan, 1998.
- OKUMA, S.S. O idoso e a atividade física-fundamentos e pesquisa. Campinas. São Paulo: Papyrus, 1998.
- PAIN, B. M.; MATSUDO, S.; ANDRADE, E.; BRAGGION, G.; MATSUDO, V. Efeito de um programa de atividade física na aptidão física e na autopercepção da aptidão em mulheres acima de 50 anos. São Caetano do sul, 2000 *apud* PASSOS, B. Os efeitos da hidroginástica na flexibilidade e nas atividades da vida diária em idosos. Brasília. Universidade Católica de Brasília. 2002.
- PAPALÉO NETO, M. Gerontologia: a velhice e o envelhecimento em visão globalizada. São Paulo: Atheneu, 1996.
- PASSOS, B. Os efeitos da hidroginástica na flexibilidade e nas atividades da vida diária em idosos. Brasília. Universidade Católica de Brasília. 2002.
- PICKLES, Barrie. *Fisioterapia na Terceira Idade*. 2 ed. São Paulo: Santos, 2000.
- POLLOCK, M.L.; EVANS, W. Resistance training for health and disease: Introduction. Department of Medicine and Exercises and Science, University of Florida, Gainesville, FL; and Donald W. Reynolds Department of Geriatrics, University of Arkansas for Medical Sciences, Little Rock, AR 72114. February, 1998.
- POWERS, S.K.; HOWLEY, J. Fisiologia do exercício: teoria e aplicação do condicionamento e o desempenho. 2 ed. São Paulo: Manole, 1997.
- RABELO, H. Os efeitos do treinamento contra resistência no desempenho nas atividades da vida diária em mulheres idosas. Brasília. Universidade Católica de Brasília. 2002
- RASO, V. Exercícios com pesos para pessoas idosas: a experiência do Celafiscs. Revista Brasileira de Ciência e Movimento V. 8, (2), 42-49, 2000 *apud* PASSOS, B. Os efeitos da hidroginástica na flexibilidade e nas atividades da vida diária em idosos. Brasília. Universidade Católica de Brasília. 2002.
- SAFONS, M. Algumas considerações sobre o envelhecimento e atividade física, Brasília, Universidade de Brasília, 2000.
- SANTARÉM, J.M. Exercícios com peso e saúde cardiovascular, 2000. Disponível em: [www.saudetotal.com.br](http://www.saudetotal.com.br)
- SANTOS, B. Importância da aderência a prática de atividades físicas regular para o idoso. Revista Virtual Epartigo, Natal, v.2, n.5, jul.2004.
- SPIRDUSO, W. Physical Dimensions of Aging. Champagne, Human Kinetics, 1995 *apud* SANTOS, B. Importância da aderência a prática de atividades físicas regular para o idoso. Revista Virtual Epartigo, Natal, v.2, n.5, jul.2004.
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## THE INTERFERENCE OF RECREATIONAL PHYSICAL ACTIVITY IN THE MATURE AND OLD PEOPLE TO PERFORM EVERYDAY PHYSICAL ACTIVITIES.

### SUMMARY

This piece of work analyzed the capacity of the elderly to perform everyday activities.. To do so, three tests were applied which assess such capacity (AVD's), which were: Test to sit down and stand up from the chair and move around the house ; Test to put on a pair of socks and, time oneself after moving 800 metres". Thirty people were tested, being all women, physically independent. These participants are part of the UNI-BH maturity laboratory. They went through the tests in two stages, split in 6 weeks of physical activities. The classes took place three times a week, each class lasted for 2 hours and the aims were the improvement of the coordination, the balance, heart beating capacity and flexibility. The results showed significant improvement in the execution of AVD's after the regular practice of recreational physical activities. We concluded that the physical activity is a fundamental factor for the elderly to have his physical independence.

**Words keys:** AVD's, independencia, quality of life

## L'INTERFÉRENCE DE L'ACTIVITÉ PHYSIQUE RÉCRÉATIVE DANS LA CAPACITÉ FONCTIONNELLE DE L'INDIVIDU ADULTE ET AGÉ À RÉALISER LES ACTIVITÉS DE LA VIE QUOTIDIENNE.

### RESUMÉ

Il fut analysé dans ce travail la capacité fonctionnelle de la personne agée à réaliser les activités de la vie quotidienne. Pour cela, il fut appliqué trois tests qui évaluent les capacités (Activités de la vie quotidienne), lesquels étaient: un test où il fallait s'asseoir et se lever d'une chaise et se déplacer dans la maison, un autre à mettre des chaussettes et enfin à chronométrer le temps pour marcher 800 mètres. L'échantillon fut composé de trente personnes, toutes volontaires, de sexe féminin, physiquement indépendantes. Les participantes font partie du Laboratoire de Maturité du UNI-BH. Ces dernières ont été soumises aux tests à deux moments distincts, séparés par six semaines d'activités physiques. Les cours avaient une fréquence de trois fois par semaine, chaque section avait la durée de deux heures, et les objectifs étaient d'améliorer la coordination motrice, l'équilibre, la capacité cardio-respiratoire et la flexibilité. Les résultats nous ont démontré qu'il y a eu des améliorations significatives dans l'exécution des AVD's après la pratique régulière des activités physiques récréatives. Nous avons pu conclure que l'activité physique est un facteur fondamental pour que la personne agée ait son indépendance physique.

**Mots clefs:** AVD's, independence, qualité de vie

## LA INTERFERÊNCIA DE LA ACTIVIDAD FÍSICA EN LA CAPACIDAD FUNCIONAL DEL SUJEITO MADURO Y DEL IDOSO EN REALIZAR ACTIVIDADES DE LA VIDA DIÁRIA.

### RESUMEN

Ellos se estimaron en este trabajo las capacidades de los asuntos maduros y de personas mayores en ellos las actividades de la vida diaria logran. Para eso, se aplicaron tres pruebas que avalúan a tales capacidades (AVD's): T1: 1) prueba de Sentarse y levantarse de la silla y locomover-se para la casa; T2: Prueba de pavimentar medias; T3: Cronometrando el tiempo para viajar 800 metros. La muestra estaba compuesta por 30 personas u es todos del sexo femenino, disicam, ente independientes. Las participantes son parte del Laboratório de Madurez del UNIBH (Instituion). Estos se sometieron a las pruebas en dos momentos diferentes, separados por semanas de actividades físicas. Las clases tenían la frecuencia de 3 veces por semana, cada sesión tenía la duración de 2 horas y los objetivos sea la mejora em la coordinación del motivo, en el equilibrio, en la capacidad cardio-respiratória y flexibilidad. Lois resultados mostraro eso havia mejoras significantes en la ejecución de AVD's después de la pratica regular de actividades físicas recreativas. Fue acabado que la actividad física es un factor fundamental para la persona mayor tener su independencia física.

**Palabras chaves:** AVD's, Calidad de vida, independência.

## A INTERFERÊNCIA DA ATIVIDADE FÍSICA RECREATIVA NA CAPACIDADE FUNCIONAL DO SUJEITO MADURO E DO IDOSO EM REALIZAR ATIVIDADES DA VIDA DIÁRIA

### RESUMO

Foram analisados neste trabalho a capacidade funcional do idoso em realizar atividades da vida diária. Para isso, foram aplicados três testes que avaliam tal capacidade (Atividades da vida diária), com os quais eram: Teste de "Sentar e levantar-se da cadeira e locomover-se pela casa; Teste de calçar meias e, cronometragem do tempo para percorrer 800 metros". A amostra foi composta por 30 pessoas, sendo todas voluntárias, do sexo feminino, fisicamente independentes. As participantes fazem parte do Laboratório de Maturidade do UNI-BH. Estas foram submetidas aos testes em dois momentos distintos, separados por 6 semanas de atividades físicas. As aulas tinham frequência de 3 vezes por semana, cada sessão tinha duração de 2 horas e os objetivos eram melhoria na coordenação motora, no equilíbrio, na capacidade cárdio-respiratória e flexibilidade. Os resultados mostraram que houve melhoras significativas na execução das AVD's após a prática regular de atividades físicas recreativas. Concluiu-se que a atividade física é um fator fundamental para o idoso ter sua independência física.

**Palavras chaves:** AVD's, independência, qualidade de vida.