# 47 - INFLUENCE OF SYSTEMATIC TRAINING OF HYDRO GYMNASTICS COMPONENTS OF FITNESS FOR ELDERLY

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## INTRODUCTION

Aging behind numerous changes to the metabolic and motor functions, these directly influence the health and quality of life of the individual. Anxious to maintain good health and quality of life is often a demand for a physical activity that does not cause impact and improve organ function in the public aged over sixty (60) years.

The beneficial effects of regular physical activity in the same process have been widely studied (MATSUDO et al, 2000;. NELSON et al, 2007.) Apud (MATSUDO, 2009).

The aging process associated with sedentary lifestyle becomes a concern when analyzing the risk of chronic degenerative diseases. Also observed a significant increase in blood pressure, loss of joint mobility due to the lack of flexibility as well as increased measures of circumferences of different body segments resulting from accumulation of body fat which increases with aging. Without an exercise program, it is possible that some people experience a decrease in range of motion. Knowing the benefits of physical activity for health is common to see groups of elderly people seeking a more active life.

The practice of physical exercise, and avoiding idleness, contributes significantly to the maintenance of physical fitness of the elderly, is in its aspects of health as the functional capabilities (ALVES, 2009). However the limitations imposed by the aging process does not permit any kind of physical activity. You need to adapt it to the needs and possibilities of movement of each person and each age group (PONT GEIS, 2003, p 66.). For this reason many people who make up this age group are predisposed the water aerobics classes it offers some advantages compared to other forms of physical activity. Almeida, Veras, Doimo (2010) states that among the physical activities are recommended for seniors to aerobics and gymnastics.

The aquatic environment provides among other advantages, the less risk the joints due to the reduced impact and allows the maintenance of balance safely during movements. In aquatic exercise, resistance to motion usually remains constant for the same movement speeds, featuring predominantly isotonic exercises (ALVES, 2009, p 19.). However the pressure (thrust) exerted by the water in all directions the body can change blood pressure during exercise practitioner.

Upon entering the pool cutaneous vessels constrict momentarily causing elevated blood pressure (BANACHELA, 1994, p 24).

During exercise blood pressure undergoes changes resulting from stress, exercise also increases the blood supply to the muscles producing a significant increase in blood circulation.

Studies show that aerobic and resistance exercise works on gaining muscle and bone mass during childhood and early adulthood and maintain during the premenopausal (VAISBERG, MELLO, 2010 p 250.).

Thus we sought to know the real effects of systematic training of gymnastics in the functional components of elderly in Triunfo-PE.

## OBJECTIVE

Identify the effects of gymnastics training on components of functional fitness of elderly in Triumph - PE.

## METHODOLOGY

The study was conducted at the Centre for Tourism and Leisure SESC de Triomphe in Pernambuco, in the period May to August 2014.

The study was approved by the ethics committee of the National Department of SESC - Social Service of Commerce. Only the people who gave their written consent to be part of the sample participated in the survey. They were informed of liberty to suspend its participation in the research at any time without prejudice.

Ten (10) elderly subjects were selected from sixty (60) to eighty (80) years. A functional physical assessment in which the levels of strength, flexibility, agility and dynamic balance and cardiorespiratory fitness through the battery of tests were collected Furlleton was performed. This test classifies the components of physical fitness of the elderly in poor, fair, average, good or excellent according to the performance obtained.

Classes were taught on Tuesdays and Thursdays at time of 15h to 16h, in a pool of 25m x 12m, with a depth of 1.60 m, with water at a temperature of 25 ° C to 27 ° C. The classes were composed of five phases: 1 Heating: displacement in the pool with moderate speed and movements of body segments with a duration of ten (10) minutes with heart rate 50-60% MHR monitored through heart frequenciador the Polar brand FT2; 2 Elongation: different body segments lasting for twenty (20) seconds for each position; 3 Aerobic Exercises: Combined movements, upper and lower limbs lasting one (1) minute for each movement with Fc between 65-75% of maximum heart rate; Located 4 exercises: strength and endurance of the upper and lower limbs with three (3) sets for each movement lasting forty (40) seconds using implements (Spaghetti brand GENCO, dumbbells, rubber, cinnamon FIORE the brand); 5 - Relaxation: slow walk for five (5) minutes and an elongation at the end.

After twelve (12) weeks to re adopted the same procedures used at the beginning of the study was performed. In the analysis, the data of the two assessments were compared by observing the standard deviation between the values obtained in both tests.

## RESULTS AND DISCURSÕES

After twelve (12) weeks no loss of sampling so that the ten (10) participants of the 3rd age group underwent reassessment.

In the lower limb strength (Raise and Sit on 30/2) test was possible to observe a 40% reduction in the lower rate, an increase of 10% on the regular rate and an increase of 20% in average and good indexes. 1.0 The graph demonstrates the change in the levels of lower limb strength after 12 weeks.

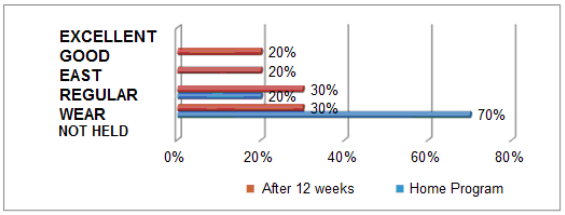


Chart 1.0 - Framework levels of lower limb strength.

In the bending test of unilateral elbow that aims to evaluate the muscle strength of upper limbs, 20% remained weak with indices, and increased two good and excellent rates. Chart 2.0 shows that the average rate and regulates fell to 0% while the excellent and good rate increased significantly to 60% and 20%.

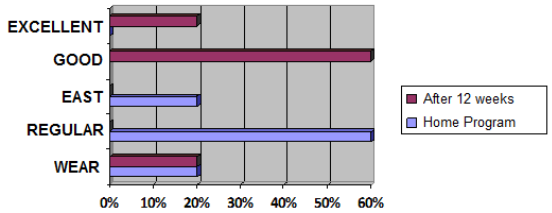


Chart 2.0 - Levels of upper limb strength.

Levels of agility and dynamic balance assessed by Time Up & Go test showed a reduction in rates obtained by the individuals assessed. 3.0 The graph highlights the accretion of 20% in the lower rate after 12 weeks.

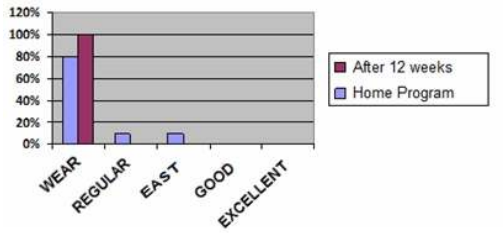


Figure 3.0 Levels of Agility and dynamic balance.

Flexibility in component were evaluated by two tests. The first upper limb (hand touching the back). At the beginning of the program obtained the following ratios: 30% poor, 30% fair, 10% average, 20% good and 10% not conseguio testing. After 12 weeks, evaluated and classified in 20% poor, 50% fair, 20% medium and 10% good. Graphs 4.0 and 4.1 exemplify this condition.

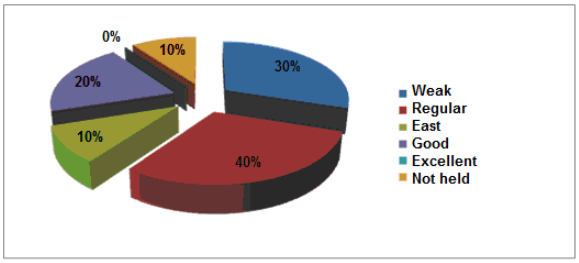


Figure 4.0 Assessment of the flexibility of upper limbs at the beginning of the program.

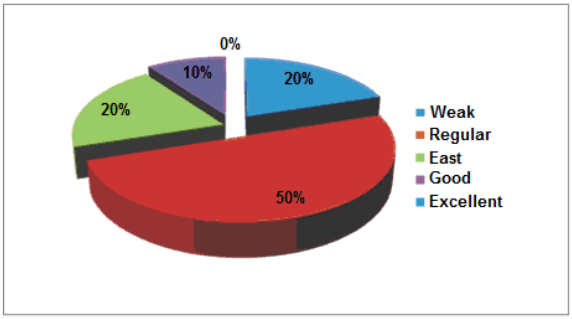


Figure 4.1 Assessment of the flexibility of upper limbs after 12 weeks.

The second test was to evaluate the flexibility of the sit and reach test, in which the assessment was obtained before the start of the program the following rates: 80% excellent and 20% were unable to perform the test. On reassessment after 12 weeks, 100% were excellent rates. The graph 5.0 and 5.1 demonstrates the change in the index on the sit and reach test.

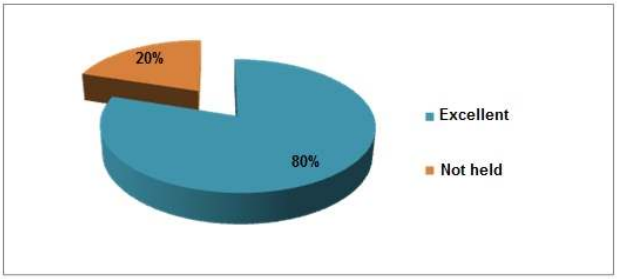


Chart 5.0 sit and reach test before the start of the program.

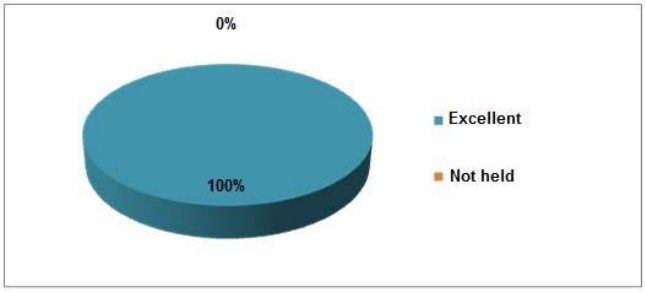


Chart 5.1 sit and reach test after 12 weeks.

Cardiorespiratory status was evaluated using the stationary walking test in 2 minutes. The ratios obtained before the start of the program were: 40% weak 30% Regular, 20% medium and 10% could not perform the test. On reassessment after 12 weeks of aerobics program levels were distributed in 20% poor, 20% fair, 50% medium and 10% good. The evolution of cardiorespiratory capacity can be clearly seen in the graphs 6.0 and 6.1

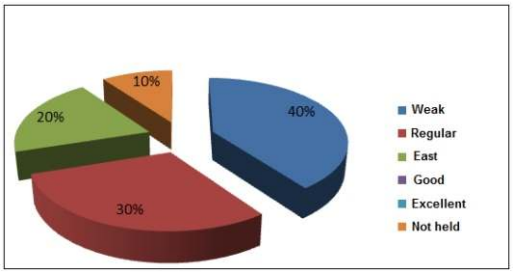


Chart 6.0 Cardiorespiratory Test conducted at program start.

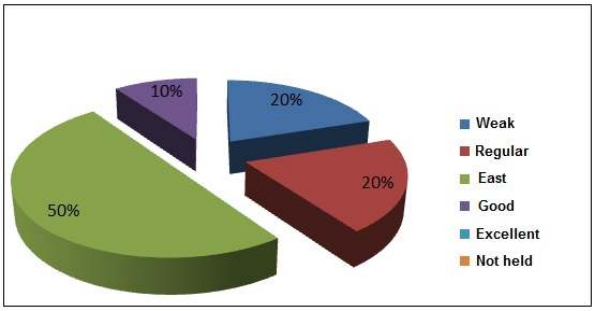


Figure 6.1 Cardiorespiratory test performed after 12 weeks.

**CONCLUSION**

Systematic training of gymnastics performed between 12 weeks caused positive changes in force levels lower and upper, flexible members, as well as cardiorespiratory fitness. However the training did not influence significantly the levels of agility and dynamic balance, thus causing a reduction in this component in the elderly evaluated.

Although this study has demonstrated the benefits that the water provided to this age group 60 to 80 years further studies are needed to ratify these results and to identify the consequences of this practice and its influence on other physical valences in order to substantiate scientifically all the effects of aerobics on health and therefore the quality of life in different age groups and especially the elderly.

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**INFLUENCE OF SYSTEMATIC TRAINING OF HYDRO GYMNASTICS COMPONENTS OF FITNESS FOR ELDERLY**

**ABSTRACT**

INTRODUCTION: The aging process associated with sedentary lifestyle becomes a concern when analyzing the risk of chronic degenerative diseases. Knowing the benefits of physical activity for health is common to see groups of elderly people seeking a more active life. Thus we sought to know the real effects of systematic training of gymnastics in the functional components of elderly in Triunfo-PE.OBJECTIVE: Identify the effects of gymnastics training on components of functional fitness of elderly in Triumph-PE.METHODOLOGY: Ten (10) elderly subjects were selected from sixty (60) to eighty (80) years. A physical assessment using as reference the battery of Furlleton test was performed. After twelve (12) weeks to re adopted the same procedures used at the beginning of the study was performed. In the analysis, the data of the two assessments were compared by observing the standard deviation between the values obtained in both tests.RESULTS AND DISCURTIONS: After twelve (12) weeks no loss of sampling so that the ten (10) participants of the 3rd age group underwent reassessment. All data collected showed improvement in indices of functional capacity after 12 weeks except for the agility and dynamic balance that exhibit a reduction in the indices obtained from revaluation.CONCLUSION: Systematic training of gymnastics performed between 12 weeks caused positive changes in force levels lower and upper, flexible members, as well as cardiorespiratory fitness. However the training did not influence significantly the levels of agility and dynamic balance, thus causing a reduction in this component in the elderly evaluated.

**KEYWORDS:** Functional capacity, Seniors, Hydro Gymnastics.

**INFLUENCE DE LA FORMATION SYSTEMATIQUE DES COMPOSANTS DE aérobic APTDÃO PHYSIQUE DES PERSONNES ÂGÉES**

**RÉSUMÉ**

INTRODUCTION: Le processus de vieillissement associé à la sédentarité devient une préoccupation lors de l'analyse du risque de maladies dégénératives chroniques. Connaître les avantages de l'activité physique pour la santé est fréquent de voir des groupes de personnes âgées qui cherchent une vie plus active. Ainsi nous avons cherché à connaître les effets réels de la formation systématique de la gymnastique dans les composants fonctionnels de personnes âgées dans Triunfo-PE. OBJECTIF: Identifier les effets de la gymnastique de formation sur les composants de remise en forme fonctionnelle de personnes âgées dans Triumph - PE. METHODOLOGIE: Dix (10) personnes âgées ont été sélectionnés parmi les soixante (60) à quatre-vingts (80) ans. Une évaluation physique en utilisant comme référence la batterie de tests a été effectuée Furlleton. Après douze (12) semaines pour re adopté les mêmes procédures utilisées au début de l'étude a été réalisée. Dans l'analyse, les données des deux évaluations ont été comparées en observant l'écart-type entre les valeurs obtenues dans les deux essais. RÉSULTATS ET DISCURSOES: Après douze (12) semaines sans perte de l'échantillonnage de sorte que les dix (10) participants du groupe d'âge 3 ont subi une réévaluation. Toutes les données recueillies ont montré une amélioration dans les indices de la capacité fonctionnelle après 12 semaines, à l'exception de la souplesse et de l'équilibre dynamique, qui présentent une réduction des indices obtenus à partir de réévaluation. CONCLUSION: Une formation systématique de gymnastique effectués entre 12 semaines a entraîné des changements positifs dans les niveaux inférieurs et supérieurs, les membres souples force, ainsi que la capacité cardiorespiratoire. Toutefois, la formation n'a pas d'influence significative sur les niveaux de l'agilité et de l'équilibre dynamique, entraînant ainsi une réduction de cette composante chez les personnes âgées évalué.

**MOTS-CLÉS:** la capacité fonctionnelle, des personnes âgées, de l'aérobic.

**INFLUENCIA DE ENTRENAMIENTO SISTEMÁTICO DE LOS COMPONENTES DE HIDROINÁSTICA APTDÃO FÍSICA DE ANCIANOS**

**RESUMEN**

INTRODUCCIÓN: El proceso de envejecimiento asociado con el estilo de vida sedentario convierte en una preocupación cuando se analiza el riesgo de enfermedades degenerativas crónicas. Conocer los beneficios de la actividad física para la salud es común ver a grupos de personas de edad avanzada que buscan una vida más activa. Por lo tanto hemos tratado de conocer los efectos reales de la formación sistemática de la gimnasia en los componentes funcionales de ancianos en Triunfo-PE.OBJETIVO: dentificar los efectos del entrenamiento de la gimnasia en los componentes de la aptitud funcional de ancianos en Triumph - PE. METODOLOGÍA :Diez (10) de los sujetos de edad avanzada fueron seleccionados a partir de los sesenta (60) a ochenta (80) años. Se realizó una evaluación física utilizando como referencia la batería de prueba Furlleton. Después de doce (12) semanas para re adoptaron los mismos procedimientos usados en el inicio del estudio se llevó a cabo. En el análisis, los datos de las dos evaluaciones se compararon mediante la observación de la desviación estándar entre los valores obtenidos en ambas pruebas. RESULTADOS Y DISCURSOES: Después de doce (12) semanas sin pérdida de muestreo para que los diez (10) participantes del grupo de tercera edad fueron sometidos a una nueva evaluación. Todos los datos recogidos mostraron una mejora en los índices de la capacidad funcional después de 12 semanas, excepto para la agilidad y equilibrio dinámico que exhiben una reducción en los índices obtenidos a partir de revalorización. CONCLUSIÓN: El entrenamiento sistemático de gimnasia realizados entre 12 semanas causó cambios positivos en los niveles de fuerza de los miembros superiores, inferiores y flexibles, así como la capacidad cardiorrespiratoria. Sin embargo, la formación no influyó de manera significativa los niveles de agilidad y equilibrio dinámico, lo que provoca una reducción de este componente en los ancianos evaluados.

**PALABRAS CLAVE:** la capacidad funcional, la tercera edad, aeróbic.

**INFLUÊNCIA DO TREINAMENTO SISTEMÁTICO DE HIDROGINÁSTICA NOS COMPONENTES DA APTDÃO FÍSICA DE IDOSOS**

**RESUMO**

INTRODUÇÃO: O processo de envelhecimento associado ao sedentarismo torna-se um fator preocupante quando analisamos os riscos de doenças crônicas degenerativas. Sabendo dos benefícios da atividade física para a saúde é comum ver grupos de idosos em busca de uma vida mais ativa. Desta forma buscou-se conhecer os reais efeitos do treinamento sistemático de hidroginástica nos componentes funcionais de idosos do município de Triunfo -PE. OBJETIVO: Identificar os efeitos do treinamento de hidroginástica nos componentes da aptidão funcional de idosos do município de Triunfo – PE. METODOLOGIA: Foram selecionados 10 (dez) idosos com idade entre 60 (sessenta) a 80 (oitenta) anos. Foi realizada uma avaliação física utilizando como referencia a bateria de teste de Furlleton. Após 12 (doze) semanas foi realizada a reavaliação adotadas os mesmos procedimentos utilizados no início do estudo. Na análise, os dados das duas avaliações foram comparados observando o desvio padrão entre às variáveis obtidas em ambos os testes. RESULTADOS E DISCURSOES: Após 12 (doze) semanas não houve perda de amostragem de modo que as 10 (dez) participantes do grupo da 3ª idade foram submetidas à reavaliação. Todos os dados coletados apresentaram melhoras nos índices das capacidades funcionais após 12 semanas com exceção da agilidade e equilíbrio dinâmico que apresentarão redução nos índices obtidos na reavaliação. CONCLUSÃO: treinamento sistemático de hidroginástica realizado no período de 12 semanas causou alterações positivas nos níveis de força de membros inferiores e superiores, flexibilidade, bem como na capacidade cardiorrespiratória. Entretanto o treinamento parece não ter influenciado de forma significativa os níveis de agilidade e equilíbrio dinâmico, causando assim uma redução neste componente nos idosos avaliados.

**PALAVRAS-CHAVE:** Capacidade funcional, Idosos, Hidroginástica.