

### 39 - INFLUENCE OF PILATES® AND WATER GYMNASTICS IN QUALITY OF LIFE OF PATIENTS WITH OSTEOPOROSIS.

ANNA PAULA GUIMARÃES FARIA SOUZA

MICHELINE OZANA

JANE VIDIGAL

ADELSON LUIZ ARAÚJO TINÔCO

KARINA OLIVEIRA MARTINHO

Universidade Federal de Viçosa – Viçosa/MG – Brasil

karina.martinho@ufv.br

#### INTRODUÇÃO:

The decrease in mortality, the fertility's reduced and the life expectancy' increased have resulted in an aging population and increasing rates of chronic diseases, including osteoporosis (FRAZÃO, 2006). This is an important public health problem because it generates enormous costs each year due to high incidence of fractures. The osteoporosis is a metabolic disorder, where you can see a decrease in bone volume with reduced trabecular bone matrix and, with a subsequent decrease in bone mineral levels, reducing the resistance of bone (DELIBERATE, 2002).

Deliberato (2002) says that regular physical activity, with well defined objectives, promotes adequate levels of physical and mental health, in addition to improving quality of life.

The practice of physical exercise, and avoiding idleness, contributes significantly to the maintenance of physical fitness of the patient, either in health and in functional capabilities (ALVES, 2004).

The effects of physical activity in prevention and treatment of osteoporosis have been demonstrated in several studies by means of weight gain or maintenance of bone mass, increase muscle strength, among other benefits, and should always be encouraged physical activities to prevent and treat osteoporosis (SILVA, 2009).

Among the practices of physical activities that the Pilates Method®, that it's a program of physical and mental training, provides a work force, improving flexibility and postural control (GONÇALVES, 2009). Another physical activity greatly sought by patients with osteoporosis is water aerobics. This physical modality is performed in the aquatic environment and the exercises are based on the use of water resistance, such as overload, promoting a number of benefits to the patient, including the complete of the practice of physical activity with a lower risk of injury and less impact on joints and benefits systems in the musculoskeletal, cardiorespiratory, allowing a better socialization of the individual, because it is an activity done in groups.

However the aim of study was to evaluate the effectiveness of the Pilates Method® and the gymnastics for the maintenance of quality of life of patients with osteoporosis.

#### MATERIALS AND METHODS:

We used 30 patients diagnosed with osteoporosis, aged between 50 and 85 years, able to practice Pilates and aerobics water for at least three months with a frequency of 2 to 3 times on a week. It was recruited from the Senior Care Program at the Federal University of Viçosa (UFV), City Hall of Viçosa-MG in gyms and Pilates studios in the same city. The sample was divided into 3 groups of 10 patients, control group (sedentary), Group I (Pilates practitioners) and Group II (practitioners of gymnastics). We performed an interview and the questionnaire (SF-36®), with the aim of evaluating the quality of life of patients, both were applied at the same time.

#### RESULTS AND DISCUSSION:

The SF36® is composed of 36 items, covering nine scales: Functional Capacity (FC) with 10 items; Physical Performance (DF) with 04 items, Pain (RD) with 02 items, General Health (EGS) with 05 items; Vitality (VT) with 04 items, Social Aspects (AS) with 02 items; Emotional Aspects (EA) with 03 items; Mental Health (MH) with 05 items and Evolution of Health Status (EV), which refers to the benchmarking between current health status and a year ago, with 01 item, to evaluate the quality of life of patients.

The SF-36® questionnaire evaluates the results that show a higher average as those with better quality of life. Thus, we obtained the following data in this sample.

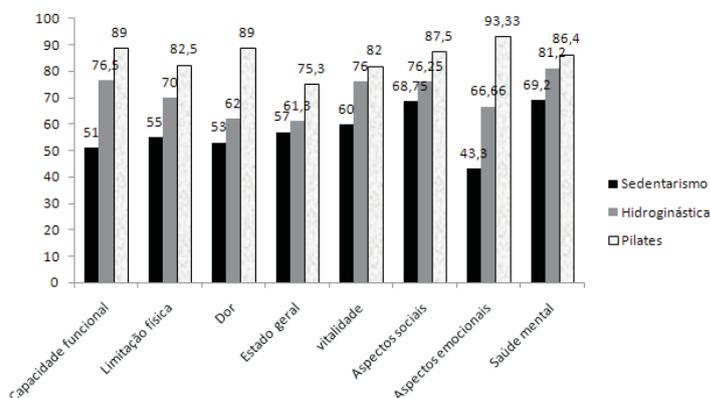


Figure 2 - Results of the control group I and II in nine scales measured by SF36®.

The nine scales evaluated showed similar results, the patients who practice Pilates showed the most satisfactory results followed by practitioners of aerobics and sedentary.

Functional capacity is determined by the conditions that the individual has to perform activities of daily living. According to Sacco (2005), Pilates® promotes the benefits as: increased amplitude and muscle strength and better physical

conditioning. These benefits contribute to a good performance in activities of daily living such as dressing, sitting, toileting, maintaining their autonomy.

The hydrogymnastic obtained a satisfactory average. According to Alves (2004), physical exercise in addition to fighting the sedentary lifestyle, contributes to improved physical fitness and therefore its functional capabilities.

The physical limitation may interfere with the daily life of the individual. It's known that inactivity promotes a decrease in individual health. Zaitune (2007) reports that the combination of physical inactivity as risk factors lead to increased occurrence of various chronic diseases.

The Pilates Method ® showed the best average result in physical limitation domain. This method has been studied by scientists, aiming to analyze the results, which shows improvement in the physical conditions of the patients (LIMA, 2009). The group practicing gymnastics averaged very close to the group practicing Pilates ®, this is due to the benefits that the activity promotes. Hydrogymnastics raises fitness levels in older adults, in addition to improving strength and muscular endurance (SILVA, 2009).

The Pain is a limiting factor for quality of life of an individual. According Deliberato (2002), the pain is one of the principal symptoms of osteoporosis, may be sharp and violent, located in the vertebral body.

The exercises are held in the Pilates ® method as a key point of the center of force, acting to promote a biomechanical alignment of the trunk, and therefore taking no relief of pain status, improvement of health. The group practicing this method showed the best average.

According to Nakago and Rabelo (2007), general health means having a condition of welfare that includes the proper functioning of the body, experience a sense of psychological well-being and especially a good quality of relations that the individual has with other people and the environment.

The figure above shows that the group practicing Pilates ® presented a general state of health very high average, 19 points higher on average compared to those practicing gymnastics.

The vitality is the ability that the human body has to generate movement through actions automatic, instinctive, mindless, thoughtless, subject to organic laws of the body incapable of acting according to reason and reflection (NAKAGO E RABELO, 2007). The sedentary group had the lowest average in the other groups, although it had a mean of 60. It was observed no significant difference between groups, so that the vitality remained in the three groups. The group of patients practicing Pilates ® again showed a higher average.

Analyzing the data presented above, it appears that there was great influence of regular physical exercise. The study groups showed a good average, but the practitioners of Pilates ®, as well as of gymnastics had a better result than the sedentary group. The best result of the practitioners of physical activity may be related to group activity, which is a major factor in having a healthy aging and improved socialization. Emotional aspects are directly related to the combination of several factors, such as reduction in healthy lifestyle habits, physical inactivity, helplessness, degrees of suffering, loss of self-esteem, poor performance in working life, family and society. These factors may be influencing the difference in values when considering the sedentary group with the groups that practice physical activity.

However, these changes can be influenced positively by regular physical activity include: improved self-esteem, improvement of cognitive function, stress reduction, and promote social interaction (MATSUDO, 2000).

The World Health Organization says that there is no official definition of mental health. Mental health can be the quality level of cognitive and emotional life that a person may submit.

Studies show that exercise can help treat mental illnesses such as anxiety and depression and may promote favorable modifications in improving the quality of life.

Activities such as aerobics and Pilates ® are indicated as beneficial because they promote an improvement in physical capacity and therefore an improvement in psychosocial aspects.

Comparing the highest average difference of all frames between the practitioners of Pilates ® and the practitioners of Water Aerobics, draws attention to areas related to pain - a difference of 27 points on average - and the Emotional Aspects - difference of 26.67.

Based on our theoretical review, we can attribute a good performance in the "pain" of the group of practitioners of the Pilates ® based method, as discussed earlier: in the center of force, acting to promote a relief of pain status improving health.

Likewise, when working body and mind in order to promote greater breathing control and body awareness, Pilates ® helps in the emotional aspects of the individual. This explains the good performance of the practitioners of Pilates ® in the "emotional aspects".

The sedentary did not mean much to poor physical fitness and conditioning, but notes that there is a decrease in psychosocial those capacities, perhaps by depression, inability to work, motivation, etc.

#### CONCLUSION:

From the results obtained in this study, conclude that patients with a medical diagnosis of osteoporosis who practice Pilates ® and gymnastics have a better quality of life compared to patients with medical diagnosis of osteoporosis and sedentary.

The Pilates ® and aerobics were effective for: functional capacity, physical limitations, pain, general health, vitality, social, emotional and mental health of patients diagnosed with osteoporosis.

A sedentary lifestyle promotes physical as well as a decline in the individual, a decrease in cognitive ability, emotional and social relationships.

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Rua José Antonio Rodrigues, 60/301 – centro – Viçosa/MG - CEP: 36570-000  
e-mail: annafaria1@yahoo.com.br

## **INFLUENCE OF PILATES® AND WATER GYMNASTICS IN QUALITY OF LIFE OF PATIENTS WITH OSTEOPOROSIS.**

### **ABSTRACT**

According to Ministry of Health, Osteoporosis appears as a relevant concern to public health. The influence of physical activity promotes adequate levels of physical and mental health, and improved quality of life. The overall objective of the study was to evaluate the quality of life of patients diagnosed with osteoporosis, compared to three groups: practitioners of the Pilates®, practicing gymnastics and a control group of sedentary people. The SF-36® was applied to evaluate the quality of life of patients diagnosed with osteoporosis. The sample consisted of thirty patients, the groups who practiced physical activities mentioned above had a frequency of two or three times weekly. Was used as a criterion for inclusion in patient diagnosed with osteoporosis, aged 50 to 85 years and practicing Pilates® activities and / or water aerobics for a minimum period of three months. From the data collected, it was found that the Pilates Method ® exerts a greater influence than for water when compared to the control group in improving the quality of life for patients with medical diagnosis of osteoporosis and may be used for physical therapy as an important tool in the treatment this pathology.

**KEYWORDS:** Quality of life, Pilates®, water gymnastics

## **GYMNASTIQUE INFLUENCE DE PILATES® ET DE L'EAU AEROBIC. EN QUALITÉ DE VIE DES PATIENTS ATTEINTS DE L'OSTEOPOROSE.**

### **RÉSUMÉ**

Selon le ministère de la Santé, l'ostéoporose apparaît comme une préoccupation pour la santé publique. L'influence de l'activité physique favorise des niveaux adéquats de qualité physique et la santé mentale, et l'amélioration de la vie. L'objectif global de l'étude était d'évaluer la qualité de vie des patients atteints d'ostéoporose, par rapport à trois groupes: les praticiens de la méthode Pilates®, la gymnastique en exercice et un groupe témoin de personnes sédentaires. Le SF-36 ® a été appliquée pour évaluer la qualité de vie des patients atteints d'ostéoporose. L'échantillon était composé de trente patients, les groupes qui pratiquent des activités physiques mentionnées ci-dessus a une fréquence de deux ou trois fois par semaine. A été utilisé comme critère d'inclusion dans patient un diagnostic d'ostéoporose, âgées de 50 à 85 ans et pratique le Pilates® activités et / ou aquagym pendant une période minimale de trois mois. D'après les données recueillies, il a été constaté que la méthode Pilates® exerce une influence plus grande que pour l'eau par rapport au groupe témoin dans l'amélioration de la qualité de vie des patients dont le diagnostic médical de l'ostéoporose et peut être utilisé pour la thérapie physique comme un outil important dans le traitement cette pathologie.

**MOTS-CLÉS:** Qualité de vie, Pilates®, L'eau aérobie.

## **INFLUENCIA DE PILATES ® Y GIMNASIA ACUÁTICA EN CALIDAD DE VIDA DE LOS PACIENTES CON OSTEOPOROSIS.**

### **RESUMEN**

Según el Ministerio de Salud, la osteoporosis aparece como una preocupación relevante para la salud pública. La influencia de la actividad física promueve niveles adecuados de calidad de salud física y mental, y la mejora de la vida. El objetivo general del estudio fue evaluar la calidad de vida de los pacientes diagnosticados con osteoporosis, en comparación con tres grupos: los profesionales del Pilates®, la gimnasia y la práctica de un grupo control de personas sedentarias. El SF-36® se aplican en la evaluación de la calidad de vida de los pacientes diagnosticados con osteoporosis. La muestra estuvo constituida por treinta pacientes, los grupos que practican actividades físicas antes mencionadas tenían una frecuencia de dos o tres veces por semana. Se utilizó como criterio para su inclusión en los pacientes diagnosticados de osteoporosis, de 50 a 85 años y la práctica de Pilates® actividades y / o aeróbica acuática durante un período mínimo de tres meses. De los datos recogidos, se encontró que el Método Pilates® ejerce una influencia mayor que el de agua en comparación con el grupo de control en la mejora de la calidad de vida de los pacientes con diagnóstico de osteoporosis y puede ser utilizada para la terapia física como una herramienta importante en el tratamiento esta patología.

**PALABRAS CLAVE:** Calidad de vida, Pilates®, gimnasia acuática.

## **INFLUÊNCIA DO PILATES® E DA HIDROGINÁSTICA NA QUALIDADE DE VIDA DOS PACIENTES PORTADORES DE OSTEOPOROSE.**

### **RESUMO**

De acordo com Ministério da Saúde, a Osteoporose configura-se como uma preocupação relevante à Saúde Pública. A influência exercida pela atividade física promove níveis adequados de saúde física e mental, além de melhoria na qualidade de vida. O objetivo geral do estudo foi avaliar a qualidade de vida de pacientes com diagnóstico médico de Osteoporose, em três grupos comparados: praticantes do método Pilates®, praticantes de hidroginástica e em um grupo controle de pessoas sedentárias. O SF-36® foi aplicado para avaliar a qualidade de vida dos pacientes com diagnóstico médico de osteoporose. A amostra estudada foi composta por trinta pacientes, os grupos que praticavam as atividades físicas acima mencionadas tinham uma frequência de duas ou três vezes semanais. Foi usado como critério de inclusão paciente com diagnóstico médico de osteoporose, com idade entre 50 a 85 anos e que praticavam atividades de Pilates® e/ou hidroginástica por um período mínimo de três meses. A partir dos dados coletados, verificou-se que o Método Pilates® exerce uma influência maior que a hidroginástica quando comparados ao grupo controle na melhoria da qualidade de vida dos pacientes com diagnóstico médico de osteoporose, podendo ser utilizado pela fisioterapia como ferramenta importante no tratamento dessa patologia.

**PALAVRAS-CHAVE:** Qualidade de vida, Método Pilates®, hidroginástica.