62 - EFFECTS OF PILATES METHOD IN THE TREATMENT OF CHRONIC LOW BACK PAIN: AN INTEGRATIVE REVIEW

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INTRODUCTION

Low back pain is a symptom within a multifactorial etiology, affects both genders and has high incidence in the economically active population, temporarily or permanently disabling for execution of professional activities. When it persists for more than six months is characterized as chronic pain, turning it a public health problem by can interfering in the social, economic, professional and cultural aspects (Barros et al , 2011).

Studies have shown that 60 % to 90 % of the adult population in special adults youngs, will suffer at some point in their life with back pain (SILVA, 2001; BREDER, 2005). The prevalence of low back pain in Brazil ranges from 60 % to 80 % in total, and individuals in the age group 50-59 years have the highest prevalence (7.7%) (BHANGLE , 2009) .

The main risk factor for the onset of low back pain is the weakness of the abdomen muscles. In chronic low back pain patients, the abdomen extensor muscles are usually weaker than the flexors. Muscle weakness is associated with physical inactivity, atrophy of the paraspinal muscles and the changes in motor control, such as delays in anticipatory adjustments of these muscles and even the transversus abdominis, and deficits in proprioception and balance. Postural changes, decreased spinal mobility, obesity and shortening of the posterior chain are also associated with chronic low back pain (FREITAS et al, 2008).

The difficulty for the prevention and treatment of low back pain is due to its multifactorial etiology and also due to the fact that many of its causes remain unknown (KOLYNIAK et al, 2004). Although theoretical evidences indicate the importance of physical activity in the prevention of low back pain, there are no specific recommendations for the development of training programs on prevention (MACEDO, 2009). Thus Pilates is currently one of the most popular methods for the treatment of chronic pain, searching for an improvement of this problem, providing even greater flexibility, body awareness , balance and strength (CAMARÃO, 2004) .

The main goal of Pilates is to strengthen the body's core, which corresponds to the region between the hips and sternum, called "powerhouse" or "centre of force". Constituted by the abdominal muscles (rectus abdominis , external and internal oblique and transversus abdominis muscles), buttocks and lumbar paraspinal muscles, which are responsible for stabilizing static and dynamic body. Since this method uniformly core muscles strengthens the stability of the lumbar spine becomes more effective and thus can alleviate the symptoms of low back pain (Dillman, 2004; Comunello, 2011) .

Given the possible benefits that Pilates can offer, this study aimed to identify, through an integrative literature review, the contributions of studies concerning the benefits of Pilates in chronic low back pain . The same appears to be relevant for guiding assistance to patients with this symptom, considering its prevalence and its high content disabling.

MATERIALS AND METHODS

In May 2013, a search was conducted in the following electronic databases: PubMed and Regional Library of Medicine (BIREME), in the period April to May 2013. We used the following search strategy between MeSH descriptors: Low Back Pain (Back Pain) and Pilates. The selection of articles was performed by two independent researchers and the references found in the studies were also selected, as well as personal files of authors, titles and abstracts of all studies found and their types cohort, clinical trials and descriptive.

Selected articles which fit the following inclusion criteria: studies with humans, quasi-experimental design, clinical trial articles published in the period 2008 to 2013, in English and Portuguese. Regarding outcomes, the studies evaluated took into account the lumbar stabilization, flexibility, chronic low back pain. Being excluded:productions previously identified from the descriptors set that are not related to the theme; article whose text can not be found accessible; book chapters, publications of the period set out for collection. It is noteworthy that the articles that appear in more than one base were considered only once.

RESULTS

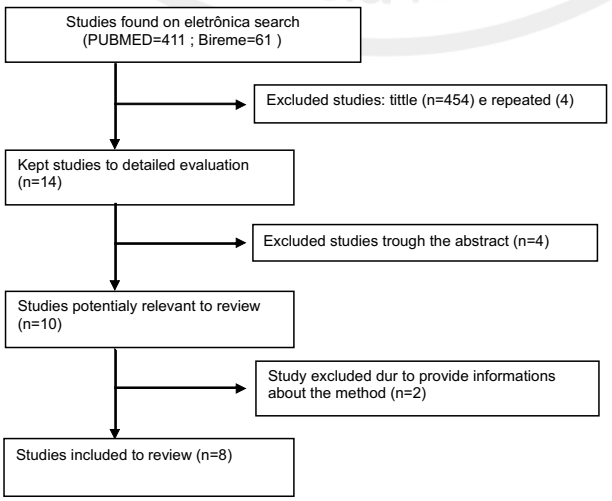

Figure 1:Flowchart of search and selection of studies for integrative review.

Author/Year	Subject	Age	Results
Pereira *et al.,* 2010	GC= 84 GE= 85	18 a 65 years	Pilates is not improved functionality (standardized mean difference = -1.34 SMP confidence interval of 95%, -2.80, 0.11, p = 0.07), pain (SMD = -1.99, CI = 95%; 4.35, 0.37, p = 0.10), lumbar stabilization (mean difference = -0.31, CI = 95%; -1.02, 0.40, p = 0.39)
Conceição, 2012	n=7	18 a 50 years	Demonstrated significant improvement in pain by visual analogue scale
Wells *et al., 2013*	GC==47 GE=48	Above 50 years	Decrease of pain and improvement of flexibility and quality of life, demonstrating success probability of 54% to 93%
Arián *et al.,* 2012	GC=20 GE=20	31,65±6,21 years average	Improved lumbar-pelvic stability and flexibility (65% to 85%)
Lise *et al.,* 2012	GC=112 GE=118	18 a 50 years	Though there is evidence supporting the efficacy and Pilates in the treatment of low back pain, there is no definitive conclusions being necessary research and clearer definitions of treatment
Sureeporn *et al.,* 2011	GC=90 GE= 89	22 a 55 years	There was a slight reduction of pain and disability
Posadzki, 2011	GC= 488 GE=490	18 a 65 years	A high level of consensus was found on the effectiveness of Pilates in reducing pain and disability in persons with back pain
Lim *et al.,* 2011	GC= 127 GE=121	18 a 65 years	Pilates was moderately higher (combined effect size [ES] = -0.55 weighted. Confidence interval of 95% [CI] = -0.08 to -1.03)

Tabela 2: Summary of the studies analyzed

According to the above flowchart is observed that 411 articles were found in the MEDLINE database and61 at BIREME, excluding 454 through analysis showed the title and 4 are repeated. They were kept for further evaluation with a total of 14 who were excluded from 4 through 10 with only the summary of potentially relevant review. We excluded 2 from these due not providing information concerning the methodology and 8 were included for integrative review

The table above shows the studies organized according to the authors and years of publication, containing the sample of subjects used in research, with the determination of the age of the participants and the results of each study.

The results are related mostly to the reduction of pain, with the exception of the study of Arian et al. (2012), which demonstrates an improvement in relation to the upper lumbar stabilization, thus agreeing with the studies of Pereira et al. (2010) and Sureeporn et al. (2011).

It is observed that there was an improvement in disability studies Lim et al. (2011) and Wells et al. (2013), but in the first place discreetly while in the second it showed up with more meaningful results. However Posadzki study (2011) showed that despite evidence supporting the effectiveness of Pilates in the treatment of low back pain, there is still no definitive conclusions, making necessary more research about the topic.

DISCUSSION

The present study was performed including studies published in the last five years, so the period 2008-2013, and found 472 articles, but only 8 met the pre-established criteria.

According Comunello (2011) the practice of Pilates emerged as a new trend in physical exercises, bringing a more holistic approach and appreciation of the interaction between mind and body, in search of a greater body awareness and a more balanced. Besides contributing to the physical form in recent years, Pilates has become a popular method for rehabilitation.

According Lise (2012) Pilates is an exercise program mind-body single developed by Joseph Pilates in the early 1900s. He called his method Contrology, becoming popular in the community and in medicine .Once a Pilates approach focuses on bodily exercise and breath control, facilitates activation of the transversus abdominis, diaphragm, multifidus and pelvic floor . The incorporation of these muscles contributes to the stability of the lumbar- pelvic region. The exercises have been asserted to be a successful program of health promotion, rehabilitation and functional training (SUREEPORN et al., 2013).

The inability of spinal stabilization by output cau imbalance between muscle function extensioners and trunk flexors is an important factor for the development of disorders of the lumbar spine. Among the forms of resistance training, Pilates emerges as a form of fitness to provide welfare to the individual, providing backup prostrength, flexibility, good posture, control, awareness and perception of movement. Thus , a number of studies have shown the growing interest of researchers in search of evidence of the method in orthopedic rehabilitation, low back pain, comparing its effects on strength, flexibility and body composition in relation to a training program resistance against conventional , is also emphasized (CONCEPTION , 2012) .

Pereira et al. (2012) states that the first phase of Pilates, which is focused on rehabilitation, the goal is to recruit deep stabilizing muscles (ie, transversus abdominis, external and internal oblique abdominal and multifidus muscles) at a submaximal effort , while decoupling ends of the trunk and pelvis so that the deep stabilizers work effectively to maintain control. This suggests that lumbar stabilization exercises are as good as Pilates. According to the same author, the exercises are gradually increased in complexity to help the patient develop strategies for stabilization during motion, which may be important for the retention of the improvements made during treatment and transfer these gains to the daily movements and activities functional.

In recent years, there has been a growing number of reports about the benefits of Pilates -based exercises for low back pain. Concomitantly, a growing number of health care practitioners are using the exercises based on the method as an approach to rehabilitation. Despite the limited number of randomized controlled trials investigating this approach, proponents claimed best torso or core strength, with indications of increased range of motion, muscle symmetry, improves the flexibility of the spine and joints, mobility, proprioception, balance, and coordination (LIM et al., 2011)

In the study of Sureeporn et al. (2013) apud Harrington and Davies (2005), it is reported indicating the method to better trunk control. About the benefits of Pilates for flexibility this method significantly improved the functional flexibility of the adductor muscles and hip flexors. However, showed no change in flexibility after training conducted in older adults . These study results

require further research on their implication effective (SUREEPORN et al., 2013).

Lysis (2012) points out in his study that the lumbar- pelvic stability and flexibility of the experimental group significantly improved in comparison with the control group , showing a volume specific exercise to cause physiological effects . It also states that prolonged exercise (about 45 minutes), with low to moderate intensity is specific to promote strength, endurance and control neuromuscular control of local muscles (rectus, oblique and transversus abdominis, multifidus and pelvic floor muscles). The Pilates exercise prescription in this study was successful to increase flexibility.

Conceição (2012) apud Martins et al. (2010) evaluating the effectiveness of motor control exercises (training in the pre -activation of the deep muscles of the trunk, with progression, performed static and dynamic ways, with activation of trunk muscles) compared to conventional intervention (general practitioner care) in case of persistent low back pain, exercise concluded that the motor control is more effective than conventional intervention pain for three months or less.

According Posadzki (2011) cited in Gladwell et al. (2006) conducted a study to evaluate the effect of modified Pilates in 49 active individuals with chronic low back pain. Participants were randomly allocated to a control group or a group of Pilates. Were assessed by visual analogue scale (VAS) for pain, subjective improvement of symptoms and functional status measurement. They report that Pilates obtained results superior to the control and improvement was observed in the area of general health, flexibility, proprioception and pain relief.

Comparing these findings, Lise (2012) cited in Lim et al. (2011) concluded that the relatively low quality of existing studies and the heterogeneity of the studies analyzed suggest that the results should be interpreted with caution. However, the few studies that examined homogeneous subgroups of patients with specific exercise programs were promising.

CONCLUSION

According to this reviewe can suggest that Pilates have positive results in the lumbar- pelvic stability and reducing pain due to their workouts are low impact while it strengthens and lengthens the body musculature desired, however there is still a minority of controversy regarding the results .

Raises up so that a through investigation of the effectiveness of the method in people with back pain or specific pathologies should be undertaken so that the conclusions can be made regarding the effectiveness of the method in people with all forms of low back pain, where there is need for further studies to define the essential elements of Pilates exercise in people with chronic low back pain.

More studies has to be done due to investigate of the effectiveness of the method in people with back pain or specific diseases should be undertaken so that the conclusions can be made regarding the effectiveness of the method.

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EFFECTS OF PILATES METHOD IN THE TREATMENT OF CHRONIC LOW BACK PAIN: AN INTEGRATIVE REVIEW

ABSTRACT

The low back pain is a symptom of multifactorial etiology that affects both genders and has high incidence in economically active population, temporarily or permanently disabling for execution of daily and professional activities. Due to the multiple etiologies, is a condition difficult to prevent and treat, finding the Pilates method a resource of great value and has shown great effectiveness in treating these pains. Thus, we sought to identify, through an integrative literature review, the contributions of studies related to the benefits of Pilates in chronic low back pain. The search was conducted in the following electronic databases: PubMed and Regional Library of Medicine (BIREME). We used the following descriptors: low back pain, and Pilates. These terms are indexed in the words of the Health Sciences (MeSH). We conducted a historical court including studies published in the last five years (2008 to 2013), where they found 472 articles, but only 8 met the pre-established criteria. It was found that in most studies there was significant improvement in decreasing pain and only 3 studies show that improvement occurred in the same way secondary to lumbar stabilization, demonstrating the need for more studies about the theme. According to this revision Pilates showed positive results in lumbopelvic stability and decreased pain, but there are minority disputes, requiring more in-depth research about the topic.

KEYWORDS : Low Back Pain . Disability. Pilates .

EFFETS DE LA MÉTHODE PILATES DANS LE TRAITEMENT DES MALADIES CHRONIQUES LOMBALGIES : UM EXAMEN INTEGRATIVE

RÉSUMÉ

La lombalgie est un symptôme d' étiologie multifactorielle qui touche les deux sexes et a une grande incidence dans la population économiquement active, temporairement ou définitivement invalidante pour l'exécution des activités quotidiennes et professionnelles. En raison des étiologies multiples, est une condition difficile à la prévention et au traitement, trouver la méthode Pilates, une ressource de grande valeur et a fait preuve d' une grande efficacité dans le traitement de ces douleurs. Ainsi, nous avons cherché à identifier, à travers une revue de la littérature intégrative, les contributions des études concernant les avantages de la méthode Pilates dans la lombalgie chronique. La recherche a été effectuée dans les bases de données électroniques suivantes:PubMed et Regional Library of Medicine (BIREME). Nous avons utilisé les descripteurs suivants: douleurs au bas du dos, et de Pilates. Ces termes sont indexés selon les termes de sciences de la santé (MeSH). Nous avons effectué une cour historique, y compris les études publiées au cours des cinq dernières années (2008 à 2013), où ils ont trouvé 472 articles, mais seulement 8 rencontré les critères préétablis. Il a été constaté que dans la plupart des études y avait une amélioration significative dans la diminution de la douleur et à seulement 3 études montrent que l'amélioration a eu lieu de la même manière secondaire à la stabilisation lombaire, ce qui démontre la nécessité de nouvelles études sur ce thème. Selon cette révision Pilates a montré des résultats positifs dans la stabilité et la diminution de la douleur lombo-pelvienne, mais il ya des conflits de minorités , nécessitant une recherche plus approfondie sur le sujet.

MOTS-CLÉS: Low Back Pain. Handicap. Pilates.

EFECTOS DEL MÉTODO PILATES EN EL TRATAMIENTO DEL DOLOR LUMBAR CRÓNICO : UNA REVISIÓN INTEGRADORA

RESUMEN

El dolor de espalda es un síntoma de etiología multifactorial que afecta a ambos sexos y tiene una alta incidencia en la población económicamente activa, de manera temporal o permanentemente incapacitante para la ejecución de las actividades cotidianas y profesionales. Debido a las múltiples etiologías, es una condición difícil de prevención y tratamiento, encontrar el método Pilates un recurso de gran valor y ha demostrado una gran eficacia en el tratamiento de estos dolores. Por lo tanto, hemos tratado de identificar , a través de una revisión integradora de la literatura, las contribuciones de los estudios sobre los beneficios de Pilates en el dolor crónico de espalda baja. La búsqueda se realizó en las siguientes bases de datos electrónicas : PubMed y la Biblioteca Regional de Medicina (BIREME). Se utilizaron los siguientes descriptores:dolor de espalda y Pilates. Estos términos se indexan las palabras de las Ciencias de la Salud (DeCS). Se realizó un corte histórico, entre ellos los estudios publicados en los últimos cinco años (2008-2013), donde se encontraron 472 artículos, pero sólo 8 cumplieron con los criterios preestablecidos. Se encontró que en la mayoría de los estudios se observó una mejoría significativa en la disminución del dolor y sólo 3 estudios muestran que la mejora se produjo de la misma manera secundaria a la estabilización lumbar , lo que demuestra la necesidad de más estudios sobre el tema. De acuerdo con esta revisión Pilates mostró resultados positivos en la estabilidad lumbo-pélvica y la disminución del dolor, pero hay controversias minoritarios, lo que requiere más investigación en profundidad sobre el tema.

PALABRAS CLAVE: Dolor de espalda baja . Discapacidad . Pilates.

EFEITOS DO MÉTODO PILATES NO TRATAMENTO DA LOMBALGIA CRÔNICA: UMA REVISÃO INTEGRATIVA

RESUMO

A Lombalgia é um sintoma de etiologia multifatorial, que acomete ambos os sexos e apresenta alta incidência na população economicamente ativa, incapacitando temporária ou definitivamente para execução das atividades diárias e profissionais. Devido às múltiplas etiologias, representa uma condição de difícil prevenção e tratamento, encontrando no método Pilates um recurso de grande valia e que vem demonstrando grande efetividade no tratamento dessas dores. Desta forma, buscou-se identificar, por meio de uma revisão integrativa da literatura, as contribuições dos estudos referentes aos Benefícios do Método Pilates em lombálgicos crônicos. A busca foi conduzida nas seguintes bases de dados eletrônicos: PUBMED e Biblioteca Regional de Medicina (BIREME). Foram utilizados os seguintes descritores: Lombalgia, e Pilates. Estes termos encontram-se indexados nos Descritores das Ciências da Saúde (DeCS). Foi realizado um corte histórico incluindo estudos publicados nos últimos cinco anos (2008 à 2013), onde foram encontrados 472 artigos, porém somente 8 obedeceram aos critérios pré-estabelecidos. Foi constatado que na maioria dos estudos houve melhora significativa na diminuição da dor e apenas 3 estudos mostram que a melhora da mesma ocorreu de forma secundária à estabilização lombar, demonstrando a necessidade de mais estudos a cerca da temática. De acordo com esta revisão o Pilates mostrou resultados positivos na estabilidade lombo-pélvica e na diminuição da dor, porém há minoritariamente controvérsias, necessitando de mais investigação aprofundada sobre o tema abordado.

PALAVRAS-CHAVE: Dor Lombar. Incapacidade. Pilates.