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Review article

The effects of the Pilates method in the elderly: a systematic review



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ABSTRACT

Several studies show the benefits of including muscle strength and aerobic physical activity in the routine of elderly people. Among the various possibilities of physical activity, the Pilates method has become a popular modality in recent years, through a system of exercises enabling to work the whole body and that corrects posture and realigns the muscles, developing the body stability needed for a healthier life. The aim of this study was to review the current evidence on the effects of the practice of the Pilates method in the elderly. A systematic literature review was conducted in the following electronic databases: Pubmed, Scielo, Lilacs/Bireme, Scopus, Pedro and Isi of Knowledge, from descriptors *pilates*, *elderly*, *old adults*, *aging*. In the selection of studies the following inclusion criteria were used: original articles in English, Portuguese and Spanish languages. All selection and evaluation processes of the articles were performed by peers and the quality was verified by the Downs and Black scale. Twenty-one studies were included. The year of publication ranged from 2003 to 2014 and the size of the sample varied from 8 to 311 elderly subjects, aged at least 60 years old. The intervention period was from 4 weeks to 12 months of Pilates exercise practice. It was concluded that despite the studies pointing to physical and motor benefits of the Pilates method in the elderly, we cannot state whether or not the method is effective, in view of the poor methodological quality of the studies included in this review.

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Efeitos da prática do método Pilates em idosos: uma revisão sistemática

RESUMO

Diversos estudos apontam os benefícios da inclusão de atividades físicas de resistência muscular e aeróbicas na rotina dos idosos. Dentre as diversas possibilidades da atividade física, o método Pilates se tornou uma modalidade popular nos últimos anos, por meio de um sistema de exercícios que possibilita trabalhar o corpo todo, corrige a postura, realinha a musculatura e desenvolve a estabilidade corporal necessária para uma vida mais saudável.

Palavras-chave:

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O objetivo do presente estudo foi revisar as evidências atuais sobre os efeitos da prática do método Pilates em idosos. A revisão sistemática da literatura foi feita nas bases de dados eletrônicas Pubmed, Scielo, Lilacs/Bireme, Scopus, Pedro e Isi of Knowledge a partir dos descritores *pilates*, *elderly*, *old adults* e *aging*. A seleção teve como critérios de inclusão artigos originais nas línguas inglês, português e espanhol. Todos os processos de seleção e avaliação de artigos foram feitos por pares e a qualidade foi verificada pela escala de Downs and Black. Foram incluídos 21 estudos. O ano de publicação variou de 2003 a 2014 e a amostra de oito a 311 idosos, com idade mínima de 60 anos. O período de intervenção apresentou variação de quatro semanas a 12 meses de exercícios do método Pilates. Concluiu-se que apesar de os estudos apontarem para benefícios físicos e motores do método Pilates em idosos, não podemos afirmar que o método é ou não efetivo, tendo em vista a baixa qualidade metodológica dos estudos que compõem a revisão.

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Introduction

According to the census of 2010,¹ Brazil moves toward an increasingly aged demographic profile, with an increase in the number of elderly subjects.² Due to medical advances, among other things, the Brazilian life expectancy has become increasingly higher, and for 2050, the Brazilian Bureau of Statistics projected a life expectancy of 81 years.¹

Aging is an involuntary and inevitable process that causes progressive structural and functional loss in the body, such as deterioration of functional capacity, muscle mass and strength loss (mainly due to sarcopenia), loss of bone mass and of hormone production, and delays in reaction time, which are risk factors that lead to a loss of autonomy and increased risk of falling.³⁻⁶

Live an independent and autonomous life, with the ability to carry out their basic tasks of daily life, is a key aspect for maintaining quality of life for the elderly.⁷ However, a condition for allowing autonomy of the elderly is to maintain their physical fitness. Physical activity seems to be a strategy for maintaining autonomy, improving functional capacity, decreasing the risk of falls and, consequently, improving quality of life.^{6,8}

According to the United States Centers for Disease Control and Prevention (CDC), elderly individuals should perform muscular strength (twice a week or more, with involvement of most muscle groups) and aerobic activities (at least 150 min of moderate intensity activity or 75 min of vigorous intensity activity, or a combination of these per week) in order to reduce the risk of mortality from all causes, coronary heart disease, stroke, hypertension, and type 2 diabetes.⁹ Among the various possibilities of physical activity, the Pilates method has become a popular modality in recent years. Such a method has emerged as a popular way of improving the strength and overall conditioning for people of all ages and currently has been used as an adjuvant method in rehabilitation of injuries.¹⁰ According to several authors, this method entails benefits such as increased bone mineral density, positive changes in body composition, and improvement in muscular strength and endurance, coordination, balance and flexibility.¹¹⁻¹³

In view of the benefits described above and considering that the practice of this method is individualized, thereby

reducing the risk of possible injury, Pilates has been quite indicated for the elderly. However, there are few studies published on systematic reviews, and particularly studies assessing the methodological quality of research in order to check the evidence for the decision-making process about the use of the method in physical activity programs aimed to the health of the elderly. In this sense, the aim of this study is to assess the effects of the Pilates method in the parameters of physical fitness and physiological and cognitive function in the elderly.

Methods

A systematic literature review was conducted in electronic databases, using the following inclusion criteria: original articles, Portuguese, English or Spanish language, and no restriction as to the year of publication. Review articles, case studies, theses and dissertations were considered as exclusion criteria.

The electronic search was conducted in the following databases: Pubmed, Scielo, Lilacs/Bireme, Scopus, Pedro and Isi of Knowledge. The descriptors used (Pilates, elderly, old adults, aging) were inserted into the Descriptors in Health Sciences (DeCS), in English and their equivalents in Portuguese language. The descriptors were used with the following combinations: "Pilates and elderly", "Pilates and old adults" and "Pilates and aging."

All articles found in the different databases were imported into EndNote, a reference managing software. After exclusion of duplicated articles, an analysis in the titles of the studies was carried out; those articles that did not address Pilates were excluded. Later, the abstracts of the articles were analyzed, and those that were not related to the review goals, for example, did not include subjects with the age group of interest for the study (individuals aged 60 or older) were excluded. The articles that remained after the analysis of the abstracts were read in their entirety, and in the absence of reasons for their exclusion were included in this review. All article selection and evaluation processes were performed independently by two reviewers.

Included studies were assessed for quality according to Downs and Black Checklist.¹⁴ This assessment was also carried out by two independent evaluators and, in case of

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