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Depressive symptoms, depression and physical activity in elderly individuals: an integrating review

Síntomas depresivos, depresión y actividad física en el envejecimiento: una revisión integrativa

Sintomas depressivos, depressão e atividade física no envelhecimento: uma revisão integrativa

ABSTRACT

Objective: The present study aimed to carry out an integrative review of the literature on the practice of physical activity and depressive symptoms / depression in the elderly. Full articles and reviews published in the PubMed and LILACS databases were used. **Method:** The present review followed six steps: identification of the theme and elaboration of the guiding question of the research, establishment of the inclusion and exclusion criteria, data extraction and categorization of the studies, analysis and synthesis of the results and presentation of the review. The search for articles was carried out from 2007 to 2017 and 253 studies were identified, however 11 studies were used as a sample in this review. **Results:** The results showed that physical activity has a positive effect on the prevention and reduction of depressive symptoms / depression, with an inverse relationship between these two variables in most studies. **Conclusion:** Therefore, physical activity is an important preventive measure for improving the mental health of the elderly.

DESCRIPTORS: Depressive symptoms. Elderly. Physical activity.

RESUMEN

Objetivo: El presente estudio tuvo como objetivo realizar una revisión integradora de la literatura sobre la práctica de actividad física y síntomas depresivos / depresión en ancianos. Se utilizaron artículos completos y revisiones publicados en las bases de datos PubMed y LILACS. **Método:** La presente revisión siguió seis pasos: identificación del tema y elaboración de la pregunta orientadora de la investigación, establecimiento de los criterios de inclusión y exclusión, extracción de datos y categorización de los estudios, análisis y síntesis de los resultados y presentación de la revisión. . La búsqueda de artículos se realizó de 2007 a 2017 y se identificaron 253 estudios, sin embargo se utilizaron 11 estudios como muestra en esta revisión. **Resultados:** Los resultados mostraron que la actividad física tiene un efecto positivo en la prevención y reducción de los síntomas depresivos / depresión, con una relación inversa entre estas dos variables en la mayoría de los estudios. **Conclusión:** Por tanto, la actividad física es una importante medida preventiva para mejorar la salud mental de las personas mayores.

DESCRIPTORES: Síntomas depresivos. Anciano. Actividad física.

RESUMO

Objetivo: O presente estudo teve como objetivo realizar uma revisão integrativa da literatura sobre a prática de atividade física e os sintomas depressivos/depressão em idosos. Utilizou-se revisões e artigos completos publicados nas bases de dados PubMed e LILACS. **Método:** A presente revisão seguiu seis etapas: identificação do tema e elaboração da questão norteadora da pesquisa, estabelecimento dos critérios de inclusão e exclusão, extração de dados e categorização dos estudos, análise e síntese dos resultados e apresentação da revisão. A busca dos artigos foi realizada no período de 2007 a 2017 e foram identificados 253 estudos, porém utilizaram-se como amostra na presente revisão, 11 estudos. **Resultados:** Os resultados mostraram que a atividade física tem um efeito positivo na prevenção e redução dos sintomas depressivos/depressão, havendo uma relação inversa, entre estas duas variáveis, na maioria dos estudos. **Conclusão:** Portanto, a atividade física é uma medida preventiva importante para a melhoria da saúde mental dos idosos.

DESCRIPTORES: Sintomas depressivos. Idosos. Atividade física.

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INTRODUCTION

The demographic transition that has taken place in the country has been increasing the concern with the elderly population. Vasconcelos and Gomes¹ they stressed that the country is still in transition and in a fast aging process, presenting new challenges with a view to expanding and improving health care for the elderly.

Fabbi et. al² emphasize that in aging there is the progressive accumulation of multiple diseases, and it occurs even more accelerated in older ages. They also point out that the same mechanisms that generate aging also generate chronic age-related diseases.

Depression is among the most prevalent diseases among the elderly, being an important mental health problem, both because of its frequency and because of its strong association with other diseases and disabilities that bring losses in quality of life in addition to the burden on the family and health services.³ It is considered a disorder of mood or affective area that can affect people in any age group, and can cause functional limitation, having in the elderly, heterogeneous forms of presentation and etiology because they involve biological aspects related to frailty, comorbidity, psychological aspects related to widowhood, changing roles and social aspects related to loneliness.⁴

According to Schimdt and Duncan et al⁵ most of the burden originating from neuropsychiatric disorders is due to depression, psychoses and disorders attributable to alcohol abuse. Neuropsychiatric and musculoskeletal disorders are responsible for approximately 25,0% of the burden of Chronic Noncommunicable Diseases (NCDs) in Brazil and this requires special attention, since the

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same individual can present multiple comorbidities.

The prevalence of depression in the elderly can differ substantially depending on the definition used for its operation, the instrument used for its detection and, mainly, the population studied.⁶

In a study carried out in seven low and middle income countries, by Albanese et al⁷ on depression in the elderly, showed that the prevalence of depression ranged from 0,5% in China to 13,8% in the Dominican Republic, according to the ICD-10 diagnostic criteria. Using criteria from another classification, EURO-D found an even higher prevalence, which ranged from 2,8% in China to 41,5% in India. Cong et al⁸ showed in research carried out with the objective of verifying the prevalence and risk factors of depression for the elderly in the city of Fuzhou (China), values of 10,5% for depression, 9,4% for slightly depressed, and 1,1% (n= 21) for severely depressed.

An important alternative for maintaining the quality of life of the elderly individual is the practice of regular physical activity, which is characterized by a body movement performed by the skeletal muscles and which results in an energy expenditure above resting levels, which can be assessed and domains such as occupational, leisure, domestic activities and transportation.⁹ This practice has been shown to protect against several problems that affect the elderly, including functional impairment, cognitive performance and depression.¹⁰

Thus, it is observed that physical activity can be considered as an important factor to modify the behavior of the elderly, improving not only their functional autonomy, but also being able to reduce depressive symptoms.

In view of the above, the following

research question is asked: What is the scientific evidence on the association between the practice of physical exercise and depressive symptoms/depression in elderly individuals? To answer this question, the present study aimed to conduct an integrative review of the literature on the practice of physical activity and depressive symptoms/depression in the elderly.

METHODS

An integrative review of scientific productions in the area of aging was used, which studied the association between

depressive symptoms/depression and physical activity.

The present review followed six steps: identification of the theme and elaboration of the guiding question of the research, establishment of the inclusion and exclusion criteria, data extraction and categorization of the studies, analysis and synthesis of the results and presentation of the review.¹¹

The search for articles was carried out from 2007 to 2017. The inclusion criteria established for this study were: reviews and complete articles published in Portuguese, English and Spanish in the PubMed and LILACS

databases and that used as an instrument the Geriatric Depression Scale (GDS). The exclusion criteria established were: reports of experiences, reviews, editorials, dissertations, theses and monographs; abstracts published in annals of events; articles that have no direct relation to the theme; repeated articles in the databases.

The descriptors used in the search were selected according to the theme of the study, through the Health Sciences Descriptors (DeCS) and the Medical Subject Heading (MESH). The descriptors were used in English and Portuguese. For the search strategy, the Boolean operator “OR” was used, with the descriptors: aged/aging “OR” depressive disorder “OR” motor activity, depressive symptoms, physical activity and the elderly. The articles were chosen by reading the title and abstracts present in the databases that were relevant to the research question.

The flowchart (figure 1) describes the path of identification, selection and inclusion of the selected studies, according to the database consulted.

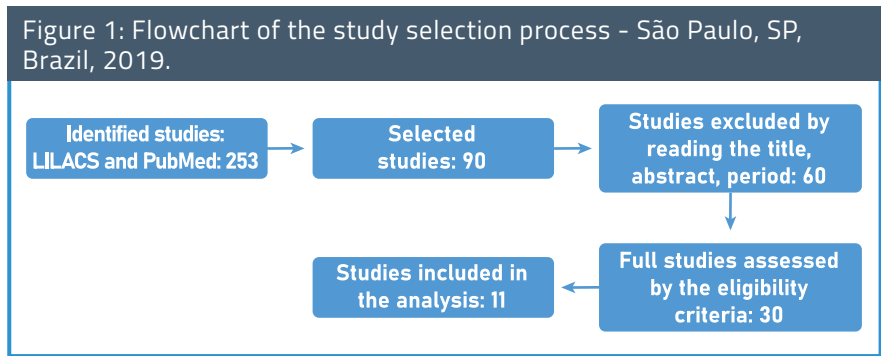


Chart 1. Summary of selected studies according to title, year, database, objective, study location, instruments used, design and main results (2007-2017). São Paulo, SP, Brazil, 2019.

STUDY	TITLE	OBJECTIVE	MAIN RESULTS
E1	The Impact of Resistance Exercise Training on the Mental Health of Older Puerto Rican Adults with Type 2 Diabetes	To determine the impact of a 16-week high-intensity progressive resistance training (PRT) training program on the mental health of older adults with type 2 diabetes.	After the 16-week intervention with progressive resistance exercise, there were strong statistically significant differences between the group that performed resistance exercise and the control group, showing improvements in both GDS means (3, 1 ± 3,5 vs. 12, 4 ± 8).
E2	Physical activity and depressive symptoms in community-dwelling elders from southern Brazil	To determine the relationship between activity and depressive symptoms in elderly residents in the community	There was a trend towards a lower prevalence of depressive symptoms in individuals with higher levels of physical activity among men, but not among women (p = 0,04, 0,03 and 0,36, respectively).
E3	Factors associated with depressive symptoms in the elderly: EpiFloripa study	To analyze the prevalence and factors associated with depressive symptoms in the elderly.	A lower prevalence of depressive symptoms was observed in the elderly who reported: having sexual intercourse (PR = 0,43), exchanging messages over the internet (PR = 0,34), high or moderate alcohol consumption (PR = 0,60; 0,59 respectively), participating in social or religious groups (PR = 0,71), being active in leisure (PR = 0,48) and having monthly relationships with friends or relatives (PR = 0,56; 0,69, respectively).

E4	Sociodemographic characteristics and life habits of elderly people with and without depression	To compare the sociodemographic variables and lifestyle of the elderly with and without depression	The percentage of elderly people who did not practice physical activity was, proportionally, higher among those who showed signs of depression when compared to those without signs ($n = 8,369$; $p = 0,004$), showing the importance of the practice of physical activities for mental health.
E5	Assessment of depression levels in elderly people who practice different physical exercises	To evaluate the level of depression in elderly people who practice different types of physical exercises.	The volunteers of the present study were divided according to the type of exercise practiced: G1- weight training ($n = 23$), G2- water aerobics ($n = 22$), G3- aerobic gymnastics ($n = 25$), G4- Pilates ($n = 22$). In addition, a group of elderly people who did not practice regular physical exercise was recruited to compose the control group (G5- $n = 24$). After comparing the groups, the group without regular physical exercise had a significantly higher score in the GDS, compared to those who regularly exercise ($p \leq 0,01$).
E6	Quality of life and depressive symptoms in elderly people of three age groups who practice physical activity	To verify if there is a difference between depressive symptoms and quality of life in elderly people of different age groups and those who practice physical activity, using the protocols: Geriatric Depression Scale (GDS-15) and SF-36.	The results showed that the active elderly showed differences between the means in the variables depressive symptoms and quality of life, but without significant difference between the three age groups.
E7	Physical Activity and Depressive Symptoms Interact to Predict Executive Functioning Among Community Dwelling Older Adults	To test the effects of physical activity, depressive symptoms and executive functioning with longitudinal data from multiple waves from a sample of elderly people in the community with generally low levels of depressive symptoms.	Those who reported greater physical activity than others had executive functioning (including working memory, inhibition and task switching) better ($\beta = 0,42$, $SE = 0,19$, $t(102) = 2,14$, $p < 0,05$). It also showed that physical activity was more protective of executive functioning in those evaluated, during periods of relatively high depressive symptoms.
E8	Participation in Physical, Social, and Religious Activity and Risk of Depression in the Elderly: A Community-Based Three-Year Longitudinal Study in Korea	To evaluate the longitudinal association between participation in physical, social and religious activities and the risk of depression in the elderly.	Logistic regression analysis indicated that elderly people who participated in physical activity had an adjusted OR of 0,81, compared to participants who did not perform this activity, showing that participation in physical activity was associated with decreased risk of depression in the elderly, after adjustment for known confounding factors.
E9	Physical benefits and reduction of depressive symptoms among the elderly: Results from the Portuguese "National Walking Program"	Check the changes in the elderly after participating in the National Walking and Running Program of Portugal, in relation to the level of physical fitness, anthropometric measures, as well as depressive symptoms.	The intervention with the practice of physical activity had an effect on the remission of depressive symptoms ($p \leq 0,001$).
E10	Prevalence of depressive symptoms in elderly women at a Reference Center for Elderly Care in the city of Passo Fundo, Rio Grande do Sul	To analyze the prevalence of depressive symptoms in elderly women and factors associated with this pathology, in a Reference and Care Center for the Elderly in the city of Passo Fundo, Rio Grande do Sul.	Of the 313 elderly people evaluated, it was observed that in terms of sufficiently active and very active physical activity levels, they were found in 181 (57,9%) of the elderly. In the bivariate analysis, the higher prevalence of depression was associated with elderly women classified as insufficiently active (10,6%; $p = 0,033$).

E11	Depressive symptoms and associated factors in elderly people in the Primary Health Care	To analyze depressive symptoms and their associated factors, with the use of antidepressants in the elderly diagnosed with depression.	The results showed that of the 248 elderly people surveyed, 59,3% do not practice physical activity and of these 42,2% were more likely to have depression (42,3%) when compared to those who practice physical activity (18,4%) $p < 0,001$.
Source: Research Data, 2019.			

RESULTS

Eleven studies were selected that contemplated what was proposed by the article and that used the GDS to assess depressive symptoms. The synthesis of the studies selected and included in the integrative review are covered in Chart 1.

DISCUSSIONS

The results of this integrative review showed that physical activity had a positive effect on depressive symptoms/depression, with an inverse relationship between these two variables.

The study by Borges, Benedetti and Mazo¹² showed a positive influence of physical exercise on depressive symptoms and functional fitness, as well as a trend towards reducing depressive symptoms and increasing functional fitness. In the study by Cheick et al.,¹³ the results showed that physical activities carried out during leisure in a regular and oriented manner, showed a tendency to reduce the scores indicative for anxiety and depression in the elderly.

Gumarães and Caldas¹⁴ conducted a systematic review study in which fifteen articles were evaluated, most showing the beneficial effects of physical activity on depressive symptoms/depression, results that are similar to those of the present review.

It is known that physical inactivity is a major public health problem and in many studies it is associated with functional disability, cognitive impairment, and depressive/depression symptoms. It can be said that physical activity is important for the elderly, improving their mood, thus suggesting that the performance of physical activity, necessarily, should be

In this perspective, Stella et al emphasize that physical activity, when regular and well planned, contributes to the minimization of the psychological distress of the depressed elderly person, in addition to offering an opportunity for psychosocial involvement, elevation of self-esteem, implementation of cognitive functions, with the exit of the depressive condition and lower rates of relapse.

part of the preventive and curative therapeutic approach to depression. The reversibility of depression in the elderly associated with a sedentary lifestyle is under discussion and further studies are needed to provide indications of a prophylactic approach for these patients.¹⁵

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Study E1 and E9 were intervention surveys and all of them showed a reduction in the scores of depression/depressive symptoms, after the intervention with the practice of physical activity. In a systematic review study by Villada, Vélez and Baena,¹⁷ all selected studies (11) were experimental, showing that most of the studies included in the systematic review indicated a beneficial effect of different types of physical activity and exercise on depressive symptoms in older adults (over 60 years) diagnosed with depression. The authors also conclude that aerobic exercise can benefit elderly people with depression, without clarity about the time needed to achieve the effect or dose that these patients should receive. Mixed physical activities, which combine aerobic work, strength, stretching, balance, and other types of exercise, seem to reduce the level of depression and should be recommended in the therapeutic approach of these people, although they still do not know the best combination, dose or duration of the intervention, which needs further investigation.

In a cross-sectional study carried out with elderly people from Karachi in Pakistan, it also reinforces the positive effect of physical activity and the prevention of depression in the elderly.¹⁸ It was observed that elderly people who performed physical activities over 310 minutes per week were 60% less likely to have depression when compared to those who performed less than 120 minutes per week (Adjusted OR = 0.4; 95% CI = 0.2–0.7). The authors reinforce that physical activity is a low-cost method, both in preventive health promotion, as well as a self-management strategy to address the mental health of the elderly, especially in low- and middle-income elderly in countries like Pakistan.¹⁸

The studies that deal with the rela-

tionship between depressive symptoms/ depression and the practice of physical activity in the elderly do not make up a large collection in the literature, being, therefore, a relevant subject that needs further investigation. What was observed among most of the studies analyzed in the present review, is that the intervention with the practice of physical activity demonstrated a non-pharmacological measure for the elderly who have depressive symptoms/depression. And this activity can be aerobic, strength or flexibility. Studies do not yet seek to show which is the best activity, but that physical activities, especially those performed in groups, are important for the treatment and remission of depressive symptoms/ depression in the elderly.

CONCLUSION

It can be concluded that the studies reviewed in this work showed the beneficial effects of physical activity and exercise for the prevention and reduction of depressive symptoms in the elderly. Contributing to deepening scientific knowledge on the subject addressed and strengthening the effect of physical activity as a non-pharmacological treatment in the elderly with depressive symptoms.

Thus, more research on the subject is suggested that presents a greater methodological rigor in the approach of the process, particularly of data analysis, thus resulting in the reduction of bias and errors.■

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