

EFFECTS OF EQUINE-ASSISTED THERAPY ON BIOPSYCHOSOCIAL ASPECTS OF OLDER ADULTS: A NARRATIVE REVIEW

EFEITOS DA EQUOTERAPIA EM ASPECTOS BIOPSISSOCIAIS DE PESSOAS IDOSAS: UMA REVISÃO NARRATIVA

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ABSTRACT

Introduction: Aging is accompanied by progressive declines in physical, cognitive, and emotional capacities, which underscores the importance of innovative and integrative interventions that promote functional independence and overall well-being in older adults. **Objective:** This study aimed to investigate the effects of equine-assisted therapy on the biopsychosocial aspects of older adults through a scoping review. **Methods:** It is a narrative literature review with no restriction on the publication period, allowing for a comprehensive analysis of the topic. Articles published in Portuguese or English, fully available in academic databases, were included. The selection was conducted by screening titles and abstracts, including studies that addressed the impacts of equine-assisted therapy on functionality, mental health, and quality of life in older adults. **Results:** The results indicate significant benefits of equine-assisted therapy in enhancing neuromuscular activation of the trunk, which contributes to improved postural stability and functional balance. Additionally, positive effects on flexibility, muscle strength, and postural alignment further reinforce its potential for fall prevention and enhanced mobility. Reductions in depressive symptoms and anxiety were also observed, along with improvements in quality of life and the regulation of cartilage and skeletal biomarkers in older adults with arthritis. **Conclusion:** Evidence suggests that equine-assisted therapy and the use of equestrian simulators are effective strategies for both rehabilitation and health promotion in older adults. However, the need for studies with greater methodological rigor and larger sample sizes is emphasized to deepen the understanding of the mechanisms involved and expand the applicability of these approaches in clinical practice.

Keywords: Equine-assisted therapy. Older adults. Quality of life. Neuromuscular function. Rehabilitation.

RESUMO

Introdução: O envelhecimento é acompanhado por declínios progressivos nas capacidades físicas, cognitivas e emocionais, o que reforça a importância de intervenções inovadoras e integrativas que promovam a independência funcional e o bem-estar global de pessoas idosas. **Objetivo:** Este estudo teve como objetivo investigar os efeitos da equoterapia em aspectos biopsicossociais de pessoas idosas por meio de uma revisão de escopo. **Métodos:** Trata-se de uma revisão narrativa da literatura, sem restrição de período de publicação, permitindo uma análise abrangente sobre o tema. Foram incluídos artigos publicados em português ou inglês, desde que disponíveis integralmente em bases de dados acadêmicas. A seleção foi realizada por meio da leitura de títulos e resumos, incluindo estudos que abordassem os impactos da equoterapia na funcionalidade, saúde mental e qualidade de vida de idosos. **Resultados:** Os resultados indicam benefícios significativos da equoterapia na ativação neuromuscular do tronco, contribuindo para a estabilidade postural e o equilíbrio funcional. Além disso, os efeitos positivos na flexibilidade, força muscular e alinhamento postural reforçam seu potencial na prevenção de quedas e na melhora da mobilidade. Também foram observadas reduções em sintomas depressivos e na ansiedade, bem como melhorias na qualidade de vida e na regulação de biomarcadores da cartilagem e do esqueleto em idosos com artrite. **Conclusão:** Evidências sugerem que a equoterapia e o uso de simuladores de equitação são estratégias eficazes tanto na reabilitação quanto na promoção da saúde do idoso. Contudo, a necessidade de estudos com maior rigor metodológico e amostras ampliadas é destacada para aprofundar o conhecimento sobre os mecanismos envolvidos e ampliar a aplicabilidade dessas abordagens na prática clínica.

Descritores: Equoterapia. Idosos. Qualidade de vida. Função neuromuscular. Reabilitação.

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INTRODUCTION

Aging is a natural process that involves physiological, psychological, and social changes, which can significantly impact daily life, especially when not accompanied by healthy habits¹. In this context, there has been a growing search for strategies that promote quality of life, whether through physical exercise in conventional environments, such as gyms, or through non-conventional approaches that have gained recognition due to the benefits observed in various populations².

Among these practices, equine-assisted therapy stands out as a therapeutic resource that uses the horse as a mediator in the process of stimulating and rehabilitating biopsychosocial aspects, applied both in older adults and in individuals with or without disabilities. Its effects extend beyond motor improvement, also encompassing emotional and social benefits that have a positive impact on quality of life³.

From a physical perspective, equine-assisted therapy contributes to the development of posture, motor coordination, and balance—an essential ability for maintaining the musculoskeletal system in static or dynamic positions, dependent on factors such as muscle tone, integrity of the vestibular system, visual perception, and central nervous system integration⁴.

In the psychosocial domain, it is observed that older adulthood often brings feelings of loneliness and social withdrawal, which may compromise well-being. Participation in environments that foster social interaction, combined with contact with horses, enhances experiences of pleasure, sociability, and emotional bonding, activating limbic system mechanisms such as trust, friendship, and companionship⁵.

In light of this scenario, the present study aims to investigate the effects of equine-assisted therapy on the biopsychosocial aspects of older adults, considering its relevance as a non-conventional practice for promoting health and quality of life.

METHODS

The present study comprises a narrative literature review, characterized by methodological flexibility and the ability to gather evidence of different natures without the adoption of rigid selection criteria. This type of review aims to provide a broad and interpretative perspective on a given theme, integrating findings from diverse sources and contexts.

For the search process, no restriction was applied regarding the year of publication, to include studies from different historical periods that could contribute to the understanding of the subject. Articles published in Portuguese and English were considered, provided that they were available in full text.

The search was not limited to a single database, allowing the use of various academic access platforms (such as SciELO, PubMed, Google Scholar, and institutional repositories) to cover the most significant possible number of relevant studies.

The inclusion criteria comprised publications that directly or indirectly addressed the effects of equine-assisted therapy on the biopsychosocial aspects of older adults. Studies that did not explicitly address this theme were excluded from the analysis. The initial selection was based on the reading of titles and abstracts; subsequently, the full texts were assessed regarding their relevance to the proposed objective.

The analysis of the included articles was conducted in a descriptive and interpretative manner, emphasizing the main results, reported benefits, and contributions of the studies to the

understanding of the role of equine-assisted therapy in promoting the quality of life of older adults.

RESULTS AND DISCUSSION

The studies analyzed consistently demonstrate the positive effects of equine-assisted therapies on multiple dimensions of older adults' health.

In the study by Mello et al.⁶, trunk neuromuscular activation was evaluated in older adults after a 10-week equine-assisted therapy program. Participants performed sessions both with and without stirrup support, and significant changes in muscle activation were observed. These results suggest that equine-assisted therapy contributes to postural control and trunk stability, aspects that are fundamental for preventing falls and maintaining functional independence in older adults.

The impact of equine-assisted therapy on mental health was addressed in a study by Schmidt, Wartenberg-Demand, and Forstmeier⁷, which investigated a specific intervention protocol combining biographical work with equine-assisted sessions in a multicenter, randomized clinical trial. The results showed significant improvements in Beck Depression Inventory-II (BDI-II) scores, reductions in anxiety symptoms, and positive effects on quality of life and reminiscence functions. These findings reinforce the potential of equine-assisted therapy not only as a motor intervention but also as a therapeutic resource with relevant psychosocial effects.

In addition to neuromuscular and psychological benefits, Chrisman⁸ explored the effects of equine-assisted therapy on osteoarthritis biomarkers. Levels of sTnT (skeletal troponin) and COMP (cartilage oligomeric matrix protein) were analyzed in a group of older adults with osteoarthritis and compared with another group that received attention-control exercise education. The results suggest that equine-assisted therapy may positively influence cartilage and skeletal biomarkers, favoring joint health maintenance and delaying the progression of degenerative processes.

Regarding balance and flexibility, Diniz et al.⁹ evaluated 30 older adults divided into an equine-assisted therapy group and a control group. After 10 weeks of intervention, the equine therapy group showed significant improvements in functionality tests, including the Berg Balance Scale (BBS), Timed Up and Go (TUG), Functional Reach Test (FRT), and Sit-and-Reach Test. These results confirm the relevance of equine-assisted therapy as a tool for maintaining functional independence and preventing falls in older age.

The effects of equine-assisted therapy on the stomatognathic musculature were also analyzed by Mello et al.⁶, who used electromyography to evaluate the activity of the masseter and temporal muscles in older adults before and after intervention. The findings indicated changes in muscle activation patterns, suggesting that the horse's tridimensional movement may influence mastication, cervical posture, and global neuromuscular coordination.

Another field of application involves the use of riding simulators as a therapeutic alternative. A study conducted by Park et al.¹⁰ investigated the effects of the Equine Riding Simulator (ERS) in older women with chronic low back pain (CLBP). After 12 weeks of training, significant reductions in pain were observed, assessed using the Oswestry Disability Index and the Visual Analogue Scale (VAS), along with improvements in body composition, postural alignment, and trunk isokinetic strength.

Overall, the findings converge on the idea that equine-assisted therapy and its related modalities benefit both physical dimensions (balance, strength, posture, motor coordination, and

joint health) and psychological and social aspects (reduction of anxiety and depression, improved self-esteem, and enhanced socialization)¹¹. The unique sensorimotor experience provided by the horse's movement appears to stimulate neurological and musculoskeletal systems in an integrated manner, generating functional adaptations with a positive impact on the independence of older adults⁶.

Another highlight is the role of equine-assisted therapy in addressing loneliness and social isolation, which are prevalent factors in aging. Contact with the horse and with the group involved in the practice fosters affective bonds, a sense of belonging, and improved social interaction. These psychosocial effects, although more challenging to quantify, are fundamental for promoting healthy and active aging¹².

It is essential to note that, despite the reported benefits, the literature still presents methodological limitations, as many studies have small sample sizes, lack control groups, or involve short intervention periods. Thus, there is a reinforced need for randomized clinical trials with greater methodological rigor to validate and expand the existing evidence¹³.

Taken together, the evidence suggests that equine-assisted therapies, including equine-assisted therapy and the use of riding simulators, represent promising tools for promoting physical, psychological, and social well-being in older adults, thereby contributing to quality of life and the maintenance of functional independence in later life.

Although the reviewed findings indicate consistent benefits of equine-assisted therapy and other equine-assisted interventions, certain limitations must be considered. First, most studies involve small sample sizes, which limits the generalizability of the results to the broader older adult population. In addition, there is marked heterogeneity in intervention protocols, including differences in the number of sessions, duration, frequency, and methods used (traditional equine-assisted therapy, riding simulators, complementary activities), making direct comparisons between studies difficult.

Another relevant aspect is the scarcity of long-term randomized clinical trials, which weakens the strength of the available evidence and prevents more robust conclusions about the

mechanisms involved. Furthermore, many studies prioritize physical outcomes, while psychosocial and quality-of-life aspects, although recognized as fundamental, still require deeper investigation and methodological standardization. These limitations underscore the need for future studies with more rigorous designs that consider diverse profiles of older adults and expand the analysis of clinical, functional, and psychosocial variables.

CONCLUSION

The studies analyzed show that equine-assisted therapies, including hippotherapy and the use of riding simulators, are effective and promising interventions for promoting the health of older adults. The results highlight relevant benefits in physical dimensions, including improved trunk neuromuscular activation, greater postural stability, gains in functional balance, flexibility, and muscle strength, as well as positive effects on body alignment. Such advances directly contribute to fall prevention and mobility maintenance, which are essential factors for preserving independence in old age.

From a psychological and social perspective, equine-assisted therapy contributes to the reduction of depressive and anxiety symptoms, improvement of quality of life, and strengthening of self-esteem, while also fostering socialization and addressing loneliness—key elements for active aging. In addition, recent findings suggest protective effects on biomarkers related to joint health, expanding the potential applications of this practice in specific clinical conditions, such as arthritis.

Taken together, the evidence suggests that equine-assisted therapy and related programs should be considered complementary strategies in both rehabilitation processes and health promotion and well-being initiatives for older adults. However, the need for further studies is emphasized, with larger samples, longer protocols, and more robust methodologies, to deepen the understanding of the mechanisms involved and consolidate the applicability of these interventions in clinical practice and public health policies.

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