

Physiotherapy Intervention in Elderly Immobility Syndrome: Narrative Review

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Abstract: With aging, several physiological changes occur in the elderly, including a decrease in muscle mass, bone density, and balance, which increase the risk of falls. As the elderly population continues to grow, the role of the physiotherapist becomes indispensable in promoting the autonomy and independence of these individuals. This study presents a narrative review on the physiotherapist's role in preventing immobility syndrome in the elderly. Immobility syndrome primarily affects the musculoskeletal system, leading to functional limitations that impact posture transfer and bed-to-chair mobility, hindering daily activities, altering gait patterns, and reducing the activity of certain systems. The implementation of early rehabilitation protocols within the first 48 hours of intervention can be applied to improve mobilization and prevent the onset of immobility syndrome. As the elderly population expands, the proactive involvement of physiotherapists in preventing and managing immobility-related issues becomes crucial. This not only enhances the quality of life for older individuals but also reduces the burden on healthcare systems. Overall, physiotherapy plays a vital role in mitigating the negative effects of immobility in the elderly, promoting their well-being, and maintaining their functional independence.

Keywords: Elderly; Immobility Syndrome; Physiotherapy.

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1. Introduction

The steep increase in the aging population is a global phenomenon that has occurred in recent decades. Several factors contribute to this growth, such as improvements in quality of life, enhanced sanitary conditions, vaccine development, and control of contagious diseases. These factors have led to an increase in life expectancy in various nations, including Brazil, which currently ranks sixth in this context. The trend is for these statistics to continue to rise in the coming years [1].

In the field of Physiotherapy, various methods are available to address the alterations associated with Immobilization Syndrome (IS). One therapy described in the literature is the use of Functional Electrical Stimulation (FES) as a therapeutic tool to restore motor and sensory functions. The application of electricity induces muscle contraction, promoting strengthening and muscle hypertrophy. This approach involves electrically stimulating a muscle that has lost its normal control to produce a functionally useful contraction [2].

This study constitutes a narrative review with the aim of assessing, discussing, and understanding the most effective physiotherapeutic care practices used in the management of patients with IS.

2. Changes Inherent to Aging

With aging, various changes also occur, such as a decrease in muscle mass, bone density, and balance, which increase the risk of falls. One way to mitigate the loss caused by aging is through physical exercise. Sedentary older adults have a higher incidence of falls [3]. The high incidence and prevalence of falls in older adults result from both intrinsic and extrinsic factors. Among intrinsic factors, we highlight sensory and motor alterations inherent to the aging process (visual changes, paresthesias, paralysis, decreased flexibility and mobility, and cognitive decline); physiotherapy and physical activity are important for prevention and/or reduction. An important tool to address these deficits. The benefits of exercise intervention have been found in the cardiovascular, neuromuscular, and sensory systems [4].

Orthopedic problems, burns, certain types of infections, psychiatric disorders such as dementia, intense pain, lack of stimulation, and surgeries can lead the elderly to remain bedridden for an extended period. Alzheimer's disease, which is often associated with aging, in its advanced stages, is a risk factor for immobility [5]. The hospitalization of older adults results in a significant loss of autonomy and independence, often exacerbating existing functional impairments due to poor nutrition, excessive rest, lack of sleep, and an excess of daily medications. It has been observed that among hospitalized older adults, 25% to 35% experience a decrease in functionality, regardless of whether they receive appropriate assistance or not [6].

3. Immobility Syndrome and Physiotherapy

Believing that variation in the form and content of each professional engagement is crucial to our goal of improving the quality of life for the elderly population, it is important to have a multidisciplinary approach, aiming to have a team with knowledge from various health areas. Several authors point out that a significant characteristic of the elderly is related to their physiology, which starts to decline after the age of 30 and experiences a significant imbalance after the age of 60. These declines may be related to the deconditioning and disuse of the elderly, making the organic systems more susceptible to pathological injuries, with a focus on changes in the musculoskeletal and cardiovascular systems [5].

Immobility syndrome (IS) often affects the musculoskeletal system, causing functional limitations that impact hospital bed transfers, posture, and wheelchair mobility, hindering daily and professional activities for bedridden patients, altering gait patterns, and decreasing the activity of certain systems. New signs and symptoms appear when functional capacity reaches dangerously low levels and can be observed in the motor system, cardiovascular system, respiratory system, gastrointestinal system, central nervous system, and deep vein thrombosis characterized by blood clot formation [2]. One of the primary objectives of rehabilitation, not only in gerontology and geriatrics but more broadly, is to prioritize and improve the physical and psychosocial functioning of individuals with chronic and disabling diseases. To achieve a satisfactory level of independence, besides diagnosing and treating loss of function and pathology, possible complications that may lead to additional problems or disability must also be analyzed [1].

Complications of immobilization and inactivity are not always considered causes of dysfunction, and in recent years, healthcare professionals have turned their attention to the negative side of prolonged bed rest and excessive rest, as well as the beneficial effects of physical exercise. Physiotherapy can readjust activities from a biomechanical perspective and the body's muscular strength to ensure safe movement and function in the elderly. In long-term care activities, gait reeducation stands out as an important factor for self-sufficiency in the elderly, which is a positive aspect [1].

Research published by the European Respiratory Society Physiotherapists Working Group and the European Society of Intensive Medicine recommends the early initiation of passive and active exercises in critically ill hospitalized patients, indicating that early treatment is safe and that these ICU patients should be admitted as soon as possible. Among the exercise modalities considered are continuous passive motion to prevent muscle atrophy, as well as the use of bicycles, bed-mounted dynamometers, free weights, assisted and active activities, early walking, neuromuscular electrical stimulation, leg press, therabands, and others [7, 8].

Early assessment and rehabilitation of critical patients are essential, depending on analgesia and sedation medication regimens, weaning regimens, and delirium control are crucial for treatment success. Bedside examination should be performed to measure muscle strength (MS), using the Medical Research Council Strength Scale or manual grip strength assessment [7-10]. These authors mention muscle groups performing the following actions: arm abduction, forearm flexion, wrist extension, thigh flexion, leg extension, and dorsiflexion. The assessment should be bilateral, with scores summed for all groups, and when the total score is less than 48, acquired frailty in the ICU should be considered in the absence of other plausible etiologies. The use of early rehabilitation protocols within the first 48 hours of hospitalization can be applied to achieve mobilization gains and prevent the development of IS. Attention should be paid to the use of muscle relaxants, to avoid confusion with MS [7].

4. Conclusion

This scenario indicates that immobility syndrome causes multiple effects on the human body systems that vary according to the duration or degree of immobility, the primary pathology, and the secondary injury that led the patient to acquire (IS). Physiotherapy has proven to be very important both in the prevention of IS and after the onset of symptoms, working to improve the quality of life of patients and helping to maintain the systems functioning in a more appropriate manner for the situation. This review identifies early mobilization (EM), kinesiotherapy, and electrotherapy as the most used physiotherapeutic resources for the treatment of elderly individuals with this syndrome.

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