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ORTHOPEDIC CARE FOCUSED ON THE PREVENTION OF ACCIDENTS IN THE ELDERLY POPULATION

Erik Bernardes Moreira Alves
http://lattes.cnpq.br/1449821778039298

Maria Paula Ricardo Silva
http://lattes.cnpq.br/3705183078365925

Maria Virgínia Silva Santos
http://lattes.cnpq.br/9713613023008597

Natália Neves Peixoto de Castro
https://lattes.cnpq.br/0157045201766925

Iagho Roseiro Figueiredo
http://lattes.cnpq.br/9861750630049905

Abstract: The following review seeks to address the growing challenge of elderly care, especially in the context of the increasing elderly population globally. The lack of adequate health services compromises the quality of care, highlighting the need for preventive strategies. Falls are significant events among elderly people, affecting autonomy and functionality. The definition of a fall and its intrinsic and extrinsic causes were discussed, highlighting the importance of a safe environment to prevent these incidents. Factors such as osteoporosis and musculoskeletal changes contribute to the vulnerability of elderly people to falls and fractures, highlighting the importance of intervention and prevention strategies focused on bone and muscle health. The health care proposal included measures such as nutritional interventions, environmental adaptations and physical activities to strengthen the motor system, aiming to improve quality of life and reduce the risk of falls. The research identified challenges in obtaining data and medical records from elderly people, highlighting the importance of education and awareness among health professionals to prevent falls, in order to improve care and quality of life for elderly people.

INTRODUCTION

The global increase in the population aged 60 and over, considered elderly from a chronological and social point of view, is occurring rapidly. As the demand for hospital care grows, the supply of health services remains insufficient, compromising the quality of care.

The elderly represents a population group that is more susceptible to various factors that compromise their health, such as falls. These events can affect functional capacity, interfering with autonomy and independence and resulting in the need for care and assistance to carry out daily activities.

A fall is defined as „an unintentional displacement of the body to a lower level in relation to the initial position, with inability to correct in a timely manner, due to multifactorial circumstances that compromise stability". The causes of falls can be classified as intrinsic, related to internal factors, and extrinsic, related to external factors.

Intrinsic causes arise from physiological or pathological processes of aging, such as the tendency for central body mechanisms essential for postural reflexes to slow down. These causes may be associated with specific medical conditions, such as loss of consciousness, Parkinson's disease, gait, posture and balance disorders, dementia, environmental perception disorders and sudden falls without loss of consciousness, known as "drop attacks".

Extrinsic causes are generally associated with environmental factors, including everyday situations. Therefore, the environment, including objects and people, can represent a risk factor for the elderly. Accessibility is crucial for this population, and a safe environment, especially within the home or in Long-Term Institutions for the Elderly (LTCFs), is fundamental to providing a life with independence, autonomy and dignity.

A safe environment is understood to be one that minimizes the risk of falls from extrinsic sources. Characteristics of a safe environment include: well-defined and marked stair steps, adequate lighting, dry, matte, non-undulating and non-slip floors, firm and strategically positioned safety railings, and equipment such as wheelchairs and beds with brakes. In contrast, an unsafe environment has unstable furniture, steep stairs without handrails, loose rugs and poorly adapted carpets, inadequate lighting, loose flooring, slippery and waxed floors, high beds, sofas, chairs and toilets that are too low, shelves that are difficult to reach., pets loose around the house and loose

electrical wires, in addition to the use of inappropriate or ill-fitting footwear.

Preventing falls, a multifactorial event, requires focus both on a safe environment and on the elderly's habits and attitudes that may pose risks. Autonomy, functional capacity and independence are essential aspects to be considered. Autonomy refers to the elderly person's ability to make decisions for themselves. Independence is the ability to perform tasks autonomously, always existing in relation to other people or situations, such as financial independence versus emotional dependence, which are social interactions and not individual issues.

Functional capacity is related to the elderly person's ability to perform Activities of Daily Living (ADL), divided into Basic Activities of Daily Living (BADL), Intermediate/ Instrumental Activities of Daily Living (IADL) and Advanced Activities of Daily Living (AADL). BADLs include: eating, maintaining urinary and fecal continence, transferring, using the bathroom, dressing and bathing. IADLs reflect the elderly person's ability to adapt to their environment, such as using the telephone, shopping, preparing meals, cleaning the house, washing clothes, using transportation, taking medication, managing finances and walking. AADLs are activities whose absence does not compromise the elderly's life, such as driving, playing sports, doing yoga, cycling, running, painting, singing, dancing, playing instruments, traveling and participating in volunteering or political activism.

After episodes of falling, there may be a reduction in autonomy, making the elderly person dependent on care. Studies show that, after falls, both elderly people and their families report an increase in difficulty and dependence in performing BADLs and IADLs, such as getting in and out of bed, walking on flat surfaces, taking a shower, walking outside the house, managing finances, shopping, using public transport and climbing stairs.

Therefore, it is essential that health professionals implement and intensify actions and strategies aimed at preventing falls in elderly patients, whether hospitalized, institutionalized or at home. Several initiatives have been highlighted with the aim of raising awareness among orthopedics and geriatrics professionals about the importance of specific care to prevent falls in the elderly.

After knowing these considerations, this study seeks to answer the following question: how to develop a nursing intervention proposal to prevent falls in the elderly?

METHODOLOGY

The present work consists of a qualitative literature review that sought to address results found in research on orthopedic and geriatric topics, whether in a comprehensive, ordered or systematic way. To carry out the work, the following steps were followed:

1. Selection of corresponding themes;
2. Selection of samples found and used;
3. Analysis of the characteristics of the original research;
4. Analysis of the results obtained;
5. Carrying out the review.

The scientific literature databases and the techniques used to carry out the review were Google Scholar, Scientific Electronic Library Online (SciELO), Virtual Health Library, Latin American and Caribbean Literature in Health Sciences (LILACS).

Thus, the present work seeks to analyze the orthopedic interface within the different thematic points correlated to the outpatient front, aiming to shed light on an educational path in geriatrics.

DISCUSSION

The prevalence of falls is notable among elderly women, many of whom have impaired functional capacity. This trend is associated with greater loss of bone calcium throughout life, influenced by physiological factors such as pregnancy, breastfeeding, menopause and pathological conditions such as osteoporosis. Although men can also be affected, the incidence is notably higher among women.

Osteoporosis, an aggravating intrinsic condition, is characterized by a decrease in calcium in bone tissue, resulting from hormonal changes, physical inactivity, inadequate diet or prolonged use of corticosteroids. This bone loss can alter the structure of the vertebrae, facilitating compressions and reducing bone resistance, predisposing to fractures in the hip, vertebrae and wrists. The degeneration of skeletal muscle fibers results in fibrosis, with a consequent reduction in muscle mass, tone and strength, increasing muscle stiffness and decreasing the range and ease of movement and gait.

Elderly people who have experienced two or more falls, called "falling elderly", are more prone to new accidents and, therefore, require a comprehensive assessment to identify the intrinsic and extrinsic factors that contribute to these events. A more complete medical history in hospital environments could identify previous falls and their causes, allowing health professionals to implement specific preventive measures, such as environmental adaptations and changes in the elderly's lifestyle habits, with the aim of reducing the recurrence of falls.

Balance, affected by decreased neural activity, plays a crucial role in maintaining posture. The balance system controls body oscillation, and its effectiveness decreases with age, especially when associated with other pathologies or a sedentary lifestyle. Balance oscillation is more pronounced in the elderly than in adults, indicating greater instability and increasing the risk of falls.

Fractures are the most frequently documented consequence in the medical records of elderly people who have suffered falls, occurring in both upper and lower limbs. This data was observed in sixteen investigated medical records that resulted in corrective surgeries, a finding corroborated by other studies on falls in the elderly. An unprecedented finding of this study was the identification of two cases of hydrocele due to direct trauma, a consequence not reported in other studies.

After fall events, elderly people often face severe consequences, including disability and immobilization, resulting in complex and costly surgical interventions, such as the implantation of orthopedic devices and application of plaster casts. These procedures require a prolonged period of rehabilitation, negatively influencing the mobility, autonomy and functionality of the elderly, in addition to possibly affecting family dynamics.

Given this context, an approach focused on preventing falls among the elderly was developed, with the aim of avoiding these adverse complications. This proposal emphasizes health promotion and mitigation of risk factors, including preserving functional capacity, maintaining motor and cognitive skills, and ensuring independence in daily activities.

The interaction between healthcare professionals and the elderly plays a crucial role in this context, requiring continuous dialogue and an individualized approach to meet the specific needs of each patient. The nursing action proposal was outlined based on the challenges identified in the profile of elderly people affected by falls, with an emphasis on topics such as healthy eating, environmental safety to prevent falls, and strengthening the musculoskeletal system to reduce the risk of fractures.

We explored the correlation between falls in older women and the relevance of a balanced diet. The analysis carried out focused on dietary observation of women aged between 60 and 69 years, considering the specific nutritional requirements to mitigate osteoporosis, especially after menopause. At this stage, decreased estrogen hormone levels increase susceptibility to loss of bone density, increasing the risk of osteoporosis and fractures.

Therefore, it is essential to adjust your diet to meet the new nutritional demands at this stage of life, including: moderation in the consumption of fats, sweets and oils; regular intake of skimmed dairy products such as milk, cheese and yogurt; inclusion of fish, poultry, legumes, eggs and nuts; adequate consumption of vegetables, fruits, whole-grain breads, cereals and grains; in addition to adequate hydration with around eight glasses of water per day.

Nursing professionals must provide detailed dietary guidance, considering the financial conditions and individual needs of elderly women. A multidisciplinary approach involving nutritionists is recommended to advise on appropriate food choices. Furthermore, the importance of social support is highlighted to facilitate adherence to dietary changes.

It is also worth highlighting the risks of excessive consumption of vitamin D, present in dairy products, due to the formation of calcium deposits in the kidneys and arteries, impairing the absorption of other minerals and may result in the formation of kidney stones.

To prevent loss of bone density or monitor conditions such as osteopenia and osteoporosis in menopausal women, it is recommended to undergo tests such as bone densitometry and quantitative computed tomography. Hormone replacement therapy (HRT) must be considered according to specialized medical advice.

When exploring new strategies, it is important to consider regular physical activity to strengthen muscles and bone density, associated with smoking cessation, which reduces estrogen hormone levels and impairs bone mineral density. Controlled exposure to the sun also plays a crucial role in the cutaneous synthesis of vitamin D and the absorption of calcium, making it essential to use adequate sunscreen to avoid skin damage.

Health professionals must identify risk factors such as early menopause, multiparity, low calcium intake, physical inactivity, low body mass index, smoking and family history of osteoporosis. This enables specific guidance aimed at preventing osteoporosis and, consequently, falls.

To ensure home safety, a well-lit environment, free from obstacles such as carpets, with suitable furniture and non-slip floors, is essential. The choice of colors in environments can influence comfort, with relaxing tones in bedrooms and stimulating tones in activity areas.

Such measures not only address fall prevention, but also promote bone health and general well-being in older adults.

Home safety strategies are crucial to mitigating the risk of falls and fractures in the elderly. The importance of creating environments that promote comfort, privacy and safety is highlighted, taking into consideration, aspects such as lighting, ventilation and ergonomic arrangement of furniture. Furthermore, it is essential to provide guidance on proper body posture during daily activities, aiming to prevent musculoskeletal injuries.

In the context of fracture prevention, the need for muscle strengthening and balance is emphasized by performing specific physical exercises and identifying and correcting risk factors such as visual disturbances, adverse effects of medications and pre-existing medical conditions.

The preventive approach encompasses interventions aimed at both the physical environment and the physical and functional well-being of the elderly, aiming to optimize quality of life and reduce the negative impacts of the aging process.

Strategies for strengthening the musculoskeletal system include measures such as abstaining from alcohol and tobacco, ensuring adequate calcium intake, morning sun exposure to stimulate vitamin D production and awareness of the risks of physical inactivity, which can result in joint stiffness, loss strength and compromised balance. It is also recommended to regularly walk outdoors, at least three times a week, as a way to protect the musculoskeletal system.

Physical exercise plays a crucial role in preventing falls, as it is able to mitigate the effects of aging on the body. Contrary to the common belief that physical deterioration is inevitable with age, the benefits of regular exercise include preventing or reducing conditions such as arthritis and osteoporosis, strengthening muscles, increasing strength, as well as helping to maintain balance and agility.

Physical activities can be categorized into domestic activities, such as walking and yard work, which offer health benefits, and aerobic activities, such as swimming, running and cycling, which are more physiologically effective and require about 30 minutes a day, three to four times a day. week, to obtain significant results in strengthening the main muscle groups involved in locomotion.

Before beginning any exercise program, it is essential that seniors undergo a comprehensive medical evaluation, especially if they have preexisting medical conditions. Health professionals play an important role in providing guidance on adequate warm-up, gradual increase in intensity and frequency of activities, adequate hydration, ideal times for physical practice, in addition to monitoring and recording exercise progression. Walking is recommended as a safe and effective activity for most elderly people, as long as it is practiced with specific guidelines to maximize benefits and minimize the risk of injury.

FINAL CONSIDERATIONS

The results of this study showed a higher incidence of falls in the female group, especially in women aged between 60 and 69 years. The main cause identified was falling from height, often resulting in fractures that required surgical interventions.

In the context of nursing care, a strategy was developed aimed at preventing falls in the elderly, with an emphasis on health promotion. These strategies were designed to address fundamental aspects of the profile of elderly people who faced falls: 1) nutritional interventions aimed at preventing the loss of bone mass in elderly women aged 60 to 69 years; 2) measures to establish a safer residential environment, taking into account the functional needs of the elderly and aspects related to the environment; 3) actions to strengthen the musculoskeletal system, aiming to preserve functionality and protect against physical inactivity.

The nursing care proposal involves changes in the elderly's behaviors, such as dietary guidance to promote a healthy diet, adaptations in the residential environment to ensure safety and instructions on physical activities to strengthen the motor system. It is important to highlight the crucial role of the medical team in helping elderly people prevent falls, encouraging improvements in mobility, adherence to adequate nutrition and creating a safe environment.

In the educational context of health professionals, the importance of raising awareness among those responsible for forming a team capable of promoting the inclusion of educational content related to falls in the elderly stands out.

In the area of care, it is essential to encourage doctors to understand the normal movement patterns and organic functions of the elderly for a comprehensive assessment and prevention of falls, also highlighting the importance of adequate recording in the medical record for quality care for the elderly.

This study highlights the need for future research on falls as a potential risk for the elderly, aiming to improve their quality of life, which is constantly growing in the country.

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