

RISK FACTORS ASSOCIATED WITH THE OCCURRENCE OF FALLS IN THE LIFE CONTEXT OF THE ELDERLY

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Abstract: A fall is an unintentional displacement of the body, with common occurrences in the elderly, constituting the third cause of death in individuals aged sixty or more. Incidences of falls are indicative of underlying problems, requiring attention from health professionals and family members. It is postulated, then, to identify the risk factors associated with the occurrence of falls in the context of the lives of the elderly, based on an integrative literature review. The following inclusion criteria were adopted: articles published from 2010 to 2020, in Portuguese, English and Spanish, which included in their titles and/or abstract aspects related to the proposed theme, as well as made available in full, free of charge and online. In this sense, factors may be associated with falls in the elderly: the use of assistive devices, environmental risks, health conditions such as rheumatism, muscle weakness, vertigo, impaired gait and balance, visual and auditory disorders, cognitive and sensory impairments, orthostatic hypotension, diabetes mellitus, common mental disorder, osteoporosis, asthma, bronchitis, dizziness, insomnia and emphysema. It is concluded that falls are recurrent in the female elderly population and cause dysfunctions, limitations in daily activities, fear of falling, reduced functional mobility and injuries. Therefore, risk factors for falls in the elderly are associated with quality of life and efforts must be made to reduce their incidence, such as identifying factors contributing to falls and raising awareness about the subject and its consequences for the health of the elderly.

Keywords: Risks, falls, elderly, prevention.

INTRODUCTION

Aging is a continuous and dynamic process, in which the individual, throughout his life, experiences different states and levels of balance between the two extremes: health

and disease. In its biological dimension, aging is characterized by being more vulnerable to aggression from the internal and external environment, which results in morphological and functional involution and difficulty in responding to stimuli, which causes fragility and vulnerability (MANSO; BIFFI, 2015).

The alterations produced by aging occur at the cellular, tissue, organic level. In the systems, it decreases the physiological reserve, the defense and adaptation systems to the environment, leaving the person more fragile and susceptible to diseases (OLIVEIRA, 2014).

The process of demographic transition resulting from population aging is accompanied by epidemiological changes and by complex changes in health-disease patterns and in the interactions between these patterns and their geographic, economic and social determinants. The decline in organic functions, physiological reserves and functional changes typical of the natural aging process lead to more predisposition to diseases in the individual, and in the geriatric group, these factors contribute to increase the prevalence, incidence and mortality in this phase of life (LOURENÇO, 2010).

In this context, associated with aging, frailty and dependence, falls are considered, in the elderly, a public health problem and their occurrence is related to high rates of morbidity and mortality, in addition to the high social and economic cost (OLIVEIRA, 2014).

A fall is an unintentional displacement of the body to a lower level than the initial position, caused by multiple factors, which may or may not result in harm to the patient. Falls can occur from height, stretcher/bed or seats such as wheelchairs, armchairs, chairs, bathtub, toilet chair or toilet, in the elderly, they are indicative of underlying problems, requiring attention from health professionals

and family members (CANUTO *et al.*, 2020).

Falls in the elderly, in particular, are one of the top five events, with definitions of safety priorities in hospitals, long-stay institutions and home care, given their potential to cause dysfunction, serious injury or other unexpected occurrence, such as death. . Therefore, injuries related to falls are a serious health problem for this population, on the other hand, there are still, in the literature, several risk factors that are preponderant in the context of falls in the elderly (AL-AAMA, 2011; GOMES; MARQUES; LEAL, 2014).

Thus, in view of the need for reflection on the subject, the following guiding question was raised: what are the risk factors associated with falls in the elderly? To elucidate this question, the following objective was elaborated: To identify the scientific productions about the risk factors associated with the occurrence of falls in the context of the lives of the elderly.

METHODOLOGY

This is an integrative literature review, whose methodological path enables the investigation, in a systematic way, about certain problems in the scientific field, postulating the identification of possible gaps in knowledge (FREITAS *et al.*, 2011).

From this perspective, a search was then carried out through the databases: National Library of Medicine (PUBMED), SCOPUS and Latin American and Caribbean Literature in Health Sciences (LILACS). “falls” AND “risks” AND “elderly”, delimiting the scope of the research, where the main national and international studies were mapped.

Inclusion criteria were: publications available in full in the aforementioned databases whose theme addressed factors related to falls in the elderly, complete works and abstracts of publications available in Portuguese, English and Spanish, with public access, carried out with data published in the

period from 2010 to 2020 published. For the exclusion criteria, incomplete articles were considered, those that were not available in full and those that were outside the pre-established period.

In this sense, it also includes understanding the history of these events, the fear of falling and, consequently, further falls, the use of auxiliary devices, environmental risks and other health conditions, such as rheumatism, muscle weakness, vertigo, gait and balance impairments, visual and auditory disorders, cognitive and sensory impairments, orthostatic hypotension, diabetes mellitus, common mental disorder, osteoporosis, asthma, bronchitis, dizziness, insomnia and emphysema, for example.

An instrument was used for data collection that included the following items: year, title, objectives, journals, type of study and authors

of publications. Using the cited descriptors, 150 articles were found. After applying the inclusion and exclusion criteria, 06 articles were selected which made up the sample.

RESULTS AND DISCUSSION

06 articles were part of this study, with respect to the year of publication, three (50%) were published in the year 2020, one in 2019 (16.7%), one in 2018 (16.7%), and one in 2019 (16.7%) . Regarding the journals, two (33.3%) were published in the Revista da Escola de Enfermagem of the “Universidade de São Paulo”, two (33.3%) in the Revista de Saúde Coletiva, one (16.7%) in the Revista Brasileira de Enfermagem and one (16.7%) in the Brazilian Journal of Ophthalmology.

Regarding the objectives, journals and type of studies, the results are presented in the table below:

| Year | Titles/ Year | Objectives | Periodicals | Type of study | Data base |
|------|---|---|-----------------------|--|-----------|
| 2017 | Safety assessment of the hospitalized elderly regarding the risk of falls | Evaluate the safety of the hospitalized elderly regarding the risk of falls according to the parameters of the Morse Fall Scale. M | Rev Bras Enferm | transverse, prospective and descriptive | SCOPUS |
| 2020 | Hospitalized elderly patient safety: an analysis of the risk of falls | To identify the risk of falls in the elderly in a hospital in the Trairi region, in Rio Grande do Norte; describe the relationship between the risk of falls and the sociodemographic characteristics of the participants. | Rev. esc. enferm. USP | descriptive, cross-cutting, quantitative | SCOPUS |
| 2020 | Correlation between functional independence and risk of falls in elderly people from three long-stay institutions | Verify the correlation between functional independence and the risk of falls in a group of institutionalized elderly | Rev. esc. enferm. USP | cross-sectional, observational, quantitative | LILACS |
| 2018 | Awareness of falls and exposure of elderly people to household risk factors | To describe the knowledge about falls of elderly residents in their homes in communities, to measure the other risks to which they are exposed in their homes and to assess the influence that knowledge about falls brings to the adoption of preventive measures. | Cien Saude Colet | transverse | PUBMED |
| 2020 | Assessment of visual functions and their relationship with functional vision and falls in active community-dwelling elderly | Evaluate the visual functions of the elderly and the relationship with functional vision and falls. | Rev.bras. oftalmol. | transverse | LILACS |
| 2019 | Recurrent falls and risk factors in institutionalized elderly | Identify the risk factors associated with the recurrence of falls in institutionalized elderly | Cien Saude Colet | longitudinal cohort | PUBMED |

Table 1– Description of the studies included in the review (n=6) on risk factors associated with the occurrence of falls in the context of elderly people’s lives. João Pessoa, PB, 2022.

Source: Survey data, 2022.

Falls are the main cause of death from injuries and the most common cause of non-fatal injuries and hospitalizations due to trauma, including a considerable percentage of these events that happen in the residence where the elderly person is located. For seniors, family members and health professionals (MAGAZINER *et al.*, 2000).

These events, falls, are seen, most of the time, only as a risk factor for fractures, disregarding the fact that falls can lead to irreversible health, social and psychological consequences, with profound economic effects and risk for new events (AL-AAMA, 2011).

For Tinetti and Kumar (2010), in addition to the issue of falls being related to the main causes of morbidity and disability in the elderly, more than a third of people over 65 years old fall each year and in half of these cases falls are recurrent.

The relationship between age and risk of falls, age over 60 years is considered the most important risk factor for falls and injuries resulting from the event due to changes in the physiological process of aging that are predictors of falls: difficulties in physical mobility, decreased functional, cognitive and visual capacity, chronic degenerative diseases and the concomitant use of various medications (SARGES *et al.*, 2017; LOPES *et al.*, 2020).

In this sense, the risk factors associated with the occurrence of falls in the context of elderly people's lives are scientifically evidenced, such information includes time of day of the event, location, activity, use of devices and incontinence, in general (ELKINS *et al.*, 2004), since falls are one of the main causes of morbidity and disability in the elderly, which is why careful attention is required to the circumstances of falls and assessment of risk factors, such as careful review of medication, as well as assessments

functional and environmental (AL-AAMA, 2011). Furthermore, the risk of falls is correlated with functional independence, that is, the more independent the elderly, the lower the risk of falls. (PAULA *et al.*, 2020).

In addition, Quigley *et al.*, (2007) state that, considering health professionals regarding the theme of falls in the context of the elderly, nurses are leading practical innovations to systematically assess the risk of falls of patients and implement prevention interventions based on in the population.

Falls are recurrent in the elderly population, more frequent among elderly females, and may be related to the fact that elderly women are more susceptible to the development of frailty syndrome in the postmenopausal phase, making them more vulnerable to falls (CANUTO *et al.*, 2020). Falls also cause dysfunctions, with limitations in daily activities, fear of falling and reduced functional mobility, in general, which may indicate that the physical condition was affected, supposedly due to lack of balance. Most injuries in the elderly are the result of multiple falls. In the hospital environment, falls are one of the most important occurrences in the breach of patient safety and are often responsible for increasing the number of days of hospitalization and worse recovery conditions (SARGES *et al.*, 2017).

Therefore, risk factors for falls in the elderly, both intrinsic and extrinsic, are associated with quality of life and efforts must be made to reduce their incidence, such as identifying factors contributing to falls and raising awareness about the subject and its consequences for the health of the elderly, as well as the monitoring of events and the definition of indicators for reducing incidence rates and, moreover, mitigating the deleterious effects to improve the quality and safety of the elderly.

Risk factors for falls in the elderly include

the following: previous falls, impaired balance, decreased muscle strength, visual impairment, polypharmacy (more than 4 medications) or psychoactive drugs, impaired gait and difficulty walking, depression, dizziness or orthostasis, functional limitations, age over 80 years, female sex, incontinence, cognitive impairment, arthritis, diabetes and pain (TINETTI; KUMAR, 2010).

The risk of falling increases with the number of risk factors: the risk of falling in 1 year doubles with each additional factor, starting from 8% with none and reaching 78% with 4 risk factors (TINETTI; KUMAR, 2010). A recent meta-analysis identified the following risk factors as having the strongest association with falls: history of falls, gait problems, use of a walking aid, vertigo, Parkinson's disease, and use of antiepileptic drugs (DEANDREA et al., 2004), in addition to postural hypotension, which is common in the elderly and may predispose to gait problems and, consequently, to falls (AL-AAMA, 2011).

Corroborating with the aforementioned authors, from the survey of studies, Gomes, Marques and Leal (2014) identified some factors related to the risk of falls in institutionalized elderly, such as being female, presenting a diagnosis of chronic disease, using benzodiazepines, having suffered a previous fall and presenting mobility restrictions. Another study reports that hospitalization for lung disease had a significant association with the high risk of falls for patients, such as Chronic Obstructive Pulmonary Disease (COPD), which causes dyspnea and fatigue on exertion, which can contribute to lower mobility, leading to risk of accidents due to falls (CANUTO *et al.*, 2020).

In addition, loose carpets, slippery floors, objects on the floor, the absence of grab bars, bathroom door switches, are considered extrinsic risk factors for falls at home, and have statistically significant associations for falls

(OLIVEIRA et al., 2019). Urinary incontinence is considered an important risk factor, people with this condition go to the bathroom more, especially at night, and together with poor lighting and impaired vision, they favor the occurrence of falls (FERREIRA *et al.*, 2019).

According to Quigley et al., (2007), given these risk factors for falls in the elderly, it is necessary to consider some issues, such as: standardizing the definition of falls, selecting instruments for screening environmental risks, including those in the family environment, establish policies aimed at preventing these events from happening, redesign the system for notifying the incidence of falls, stratify the levels of identification of the risk of falls in the elderly and the communication system, as well as develop material on the prevention of falls for health education.

From the perspective of Al-Aama (2011), falls, as an important public health issue, a complex multifactorial phenomenon that can cause serious and devastating consequences and several risk factors have been identified in the literature, but that these falls can be prevented by through a variety of evidence-based interventions. Identifying patients at risk is the most important part of management, as the application of preventive measures in this vulnerable population can have a profound effect on public health.

In view of the above, it is understood, therefore, how important it is to assess the risk of falls and design interventions to prevent falls and, subsequently, reduce the risks of injuries, such as injuries, related to falls, since most of the elderly population has little knowledge about falls and is exposed to several risk factors daily (NETO et al., 2018). Finally, with regard to health programs and actions to prevent incidences or to analyze the event itself, the environmental facilities must be observed and related, in some way, to the types of injuries, such as lacerations,

fractures and bleeding, as well as the severity of injuries (QUIGLEY *et al.*, 2007).

FINAL CONSIDERATIONS

Health professionals help to ensure the safety of the elderly, including the prevention of falls and injuries/traumas related to falls, in the face of risk factors. However, the responsibility to promote protection for the elderly in relation to falls and the different injuries that this can cause, requires a shared responsibility not only including health professionals, since many of the events take place in the home of the injured individual.

Therefore, this shared responsibility involves family members, caregivers, municipal public management, mainly as a creator and implementer of public health policies, with fall risk reduction programs and injury prevention techniques, in the family environment, permanence institutions and in health units, since injuries/traumas related to falls have serious consequences that, by the way, may include dysfunctions and/or death, but that, on the other hand, health actions aimed at prevention so that these events do not happen enable life and quality of life for the elderly.

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