



FALL CHARACTERIZATION AMONG HOSPITALIZED ELDERLY: IMPLICATIONS FOR NURSING AND PATIENT SAFETY

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ABSTRACT

The purpose of this study was to analyze the profile of elderly patients victims of falls, in a hospital of Rio de Janeiro city, Brazil. It used a descriptive and quantitative approach; the data collection was made in documents of the institution (notifications of sentinel events), and organized with the help of Excel program, triangulating the data to enable the association of the findings with the theory. Falls were more frequent in oriented men, the majority of the falls occurred during the night, involving mobilization to use the bathroom, and indicating desorientation in these situations. The elderly are vulnerable to falls in the hospital scenario, what interferes in their functional capacity, independence, autonomy and quality of life. Nursing actions should promote the safety of this public, through the establishment of an individual care plan, addressing environmental issues, and awareness of health staff.

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INTRODUCTION

Aging is a physiological phenomenon characterized by changes in the standard of living, notably functional, biochemical and psychological changes that determine the level of functional capacity that the individual presents according to their vulnerability and the incidence of pathological processes. Functional capacity is related to the individual's ability to perform his daily physical and mental activities (Reis, Rocha, Duarte, 2014). The naturalness of the aging process affects all the organic functions and can generate some degree of dependence, according to the diminution of its capacity. These changes require a differentiated attention to old age, since autonomy and independence can be affected,

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especially with regard to daily basic and instrumental activities (Couto, 2016). Since the beginning of the 1970s, a transition of the Brazilian demographic panorama began: where there used to be a rural / traditional society with high birth rates and mortality, it was transformed into an urban and modern society with low birth rates and new structures relatives. This transition caused significant changes in the age group, marked by a reduction in population growth and a consequent increase in aging. Such a situation challenges the health services to reorganize themselves, keeping life a priority, and directing long-term efforts towards emergency demands according to the needs of the elderly public (Miranda, Mendes, Silva, 2016). Fragility in the elderly constitutes a multidimensional syndrome characterized by functional deterioration, vulnerability of multiple physiological systems and alterations of the aging process such as sarcopenia, neuroendocrine dysregulation and immune system dysfunction (Pegorari, Tavares, 2014). Known as a fragility syndrome, it consists of five components for identification: unintentional weight loss, self-report of fatigue, decreased muscle strength, decreased

gait and low level of physical activity. Its prevalence increases as the age advances, and health strategy planning is of paramount importance since mortality, institutionalization and hospitalization can be recurrent, implying more costs and slowness in recovery (Pegorari, Tavares, 2014). The National Policy for the Elderly, established by Law 8.842 / 94 and regulated by Decree 1948/96, defines norms and standards for the care of the elderly, fostering the insertion of the elderly in the socioeconomic life of the country, promoting their autonomy, as well to train professionals in the service network. As a mark of one of the social achievements, in 2003, the Statute of the Elderly was enacted by Law No. 10,741, in order to assign the role of the family, the community and society in the care of the elderly.² According to the Statute, the elderly population is formed from the age above 60, and all the adaptations and facilities to attend to physical, mental, intellectual, social and spiritual health in a dignified manner are guaranteed by law (Couto, 2016; Ministério da Saúde, 2013).

In this scenario, a new professional health profile is necessary, with emphasis on the role of the nurse, with potential skills and competencies to plan and implement qualified care. The nurse is able to diagnose the needs of the user, establish adequate care planning, including the user and their family, when possible, in decision making; act to improve the potential for reversal of consequences, as well as the increase in healthy life expectancy and the absence of disabilities (Storti, 2013). Fall represents great relevance in the elderly population range due to its high prevalence; is defined as an unplanned episode characterized by the change of position of the individual to a lower level of his initial position, without there being any intrinsic determining factor, inevitable accident or loss of consciousness. As extrinsic determinants for falls, it can be observed the physical environment, such as slippery floor, loose carpets, absence of support bar, unstable furniture, inadequate lighting, among others. On the other hand, the intrinsic factors are associated with the functional disability of the elderly, such as iatrogenesis, alterations of the balance, gait deficit, among others.⁷⁻⁸ According to the World Health Organization, falls have a significant predominance among external factors of unintentional injuries, with about 30% of elderly people experiencing falls each year, increasing to 40% among elderly people with more than 80 years and 50% those who are kept in institutions. Therefore, it can be affirmed that it is an audience that merits attention because of its physical fragility (Gaspar *et al*, 2017).

Fall triggers soft tissue injuries, lacerations and fractures, with hip fracture being responsible for the majority of hospitalizations, as well as causing pain in the smallest details, leading to immobilization in the bed, tissue loss, onset of pressure injuries, as well as complications respiratory and urinary disorders (Falsarella, Gasparotto, Coimbra, 2017). Then there is the fear of falling, considered a predictor of the fall, bringing psychological consequences as regards the affective state promoted by the awareness of danger. It is characterized by the restriction of the elderly in the execution of basic daily activities contributing to the increase of inactivity and decline of physical conditioning, impairment of the lower limbs, balance and increased risk of further falls, as well as restlessness of the elderly and relatives (Vitorino *et al* 2017). It is important to identify post-fall syndrome situations, evidenced as a phobic reaction in standing up; in these cases there are decreased self-esteem, loss of self-confidence and dissatisfaction with life, being frequent in the elderly public

already susceptible to psychological factors negatively related to depressive symptoms (Falsarella, Gasparotto, Coimbra, 2017; Vitorino *et al* 2017). Considered a multidimensional syndrome, frailty in the elderly involves the interaction of risk factors in four dimensions: behavioral, biological, socioeconomic and environmental. As for behavioral factors, quality of life is slightly associated with poor diet, sedentary lifestyle, excessive consumption of licensed drugs, low intakes of nutrients such as calcium, vitamin D, intake of drugs without a medical prescription, dizziness increase drop rates (Couto, 2016). The biological dimension refers to race, age, gender and changes that the human body presents, as a decline in cognitive functions and comorbidity associated with chronic / degenerative diseases.

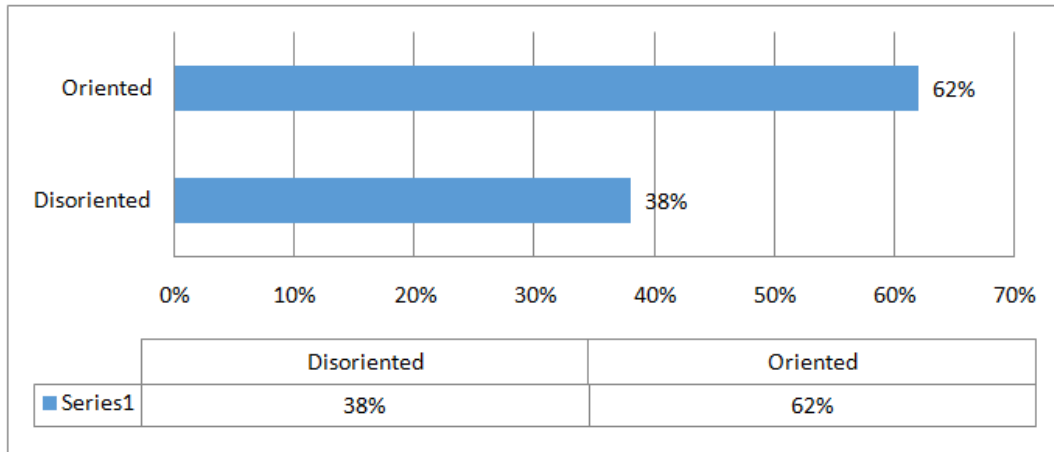
As for the socioeconomic dimension, there is low income, low level of schooling, access to fragile health services, minimal conditions for housing and social interaction compromised in order to induce isolation and depression. In the sphere of the built environment it presents an inadequate house to carry out the daily activities next to the presented physical conditions: stairs without support bars, inadequate illumination, slippery floors, distant switch bridges, inadequate sills, loose rugs, favoring the risk of fall (Couto, 2016). The perspective of population aging in recent years intensifies the search for research and changes in health institutions that aim to improve the quality of care and decrease of rates of decline. Assistance in the fall event is of primary importance for clinical consultation, identifying signs and symptoms during the episode, associated with the circumstances of the site, day of the week, exact time of fall, or activity performed before the event, when it is associated with hypotension postural, fever, hypertensive crises, recurrences of falls, an emergency care is required to happen so that the identification of these multifactorial events. Vulnerability is noted when there is a need for care directing interventions (Falsarella, Gasparotto, Coimbra, 2017). The studies point to the identification of risk factors, management and prevention of falls in the elderly as a fundamental part to link health care observed in the quality of care provided followed by planning and interventions, in order to subsidize actions to promote, prevent, recover and rehabilitation of individual, family and community health (Falsarella, Gasparotto, Coimbra, 2017). Due to the exposed problem, this research had as objective to analyze the profile of the elderly patients victims of falls and to detect the most frequent reasons, providing an attribution in the approach of this theme.

MATERIALS AND METHODS

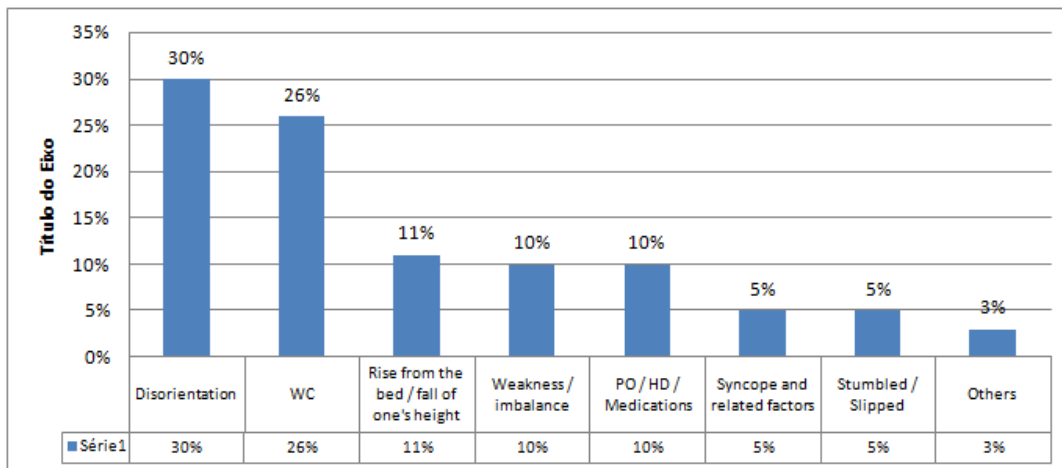
For the development of this research, we opted for a quantitative methodological approach, which consists in the use of strategies to test, order and measure objective theories, examining the relations between variables and establishing confidence intervals between the evaluated parameters. Therefore, this approach considers everything that can be quantified, translating into numbers the data collected to classify and analyze them (Vieira, 2015). This is a descriptive and exploratory documentary study, whose data were collected in the book of records of adverse events with the elderly aged 65-90 years, from 2013 to 2014, in a private hospital in the city of Rio Janeiro. Knowing these data within an institution is extremely important for proper management, minimizing unwanted injury and damage and reducing costs; therefore, indicators constructed by the hospital are sources of information for the monitoring and evaluation of quality in

care. These documents make it possible to monitor the cases of falls and the factors that led to this incident. In this way, the data were organized and tabulated for better analysis. Regarding ethical-legal aspects, the study was submitted to the Ethics Committees of Adventist Faculty of Bahia and a general hospital in the city of Rio de Janeiro, and received approval through the CAAE: 45469319.90000.0042.

activities of daily living (ADLs): basic activities of daily living (BADLs) and instrumental activities of daily living (IADLs). The BADLs comprise the ability to feed themselves, to maintain the continence of fecal and urinary elimination, to dress, to use the bathroom, to bathe (Gonçalves, Tourinho, 2012).



Graphic 1. Orientationlevel



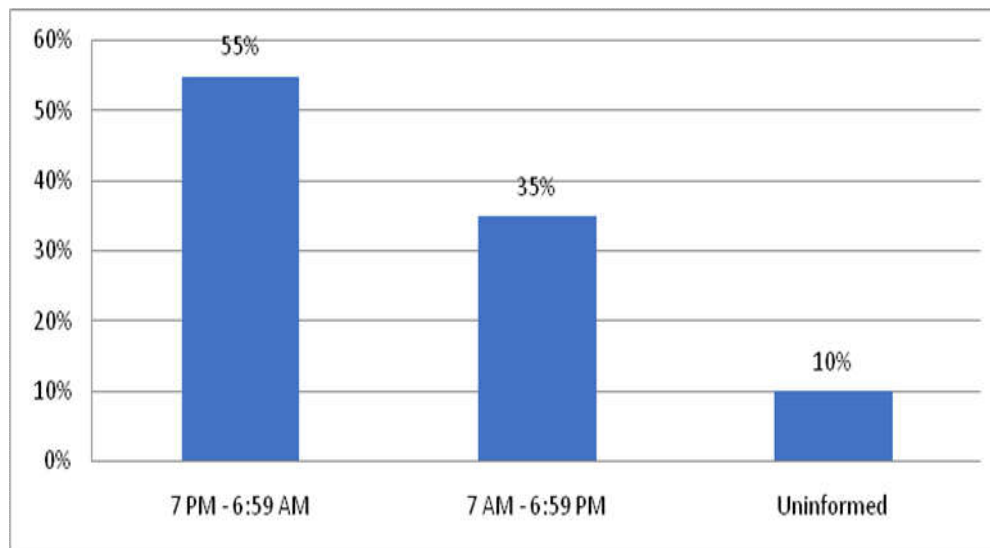
Graphic 2. Triggering factors of falls Source: Hospital documents

RESULTS AND DISCUSSION

During the study period, 99 falls were recorded in the elderly, and in 74 the age was between 65 and 90 years, and approximately 10% of the cases were recurrent falls, that is, elderly people who fell more than once during the same hospitalization. As already seen, the elderly are the group most vulnerable to falls, since this type of accident arises from diminished functional or adaptive capacity, affecting their autonomy and independence. So, the fall is considered the main cause of accidental death in people over 65 years old, that is, approximately 70% of the deaths (Gonçalves, Tourinho, 2012). It was observed that falls were more prevalent in men (68%) than in women (32%), which differs from the findings of Oliveira *et al* (2014), in which the incidence of falls in women prevailed. Observing the records, it was observed that the majority of the elderly victims of fall were oriented at the time of the fall, i.e., other factors should have favored the fall and not the state of consciousness, as shown in Figure 1:

With the orientation preserved, it is believed that a large part of the elderly also maintained autonomy regarding the

The IADLs are characterized by the capacity of the elderly to adapt to the environment as shopping, tidying up, using the telephone, washing dishes, walking, using transportation, taking medicine, these are essential to sustain independence and the advanced activities of daily living (AADLs) are those that in their absence do not disturb the life of the sports, driving a car, yoga, cycling, running, dancing, playing an instrument, traveling, among others. With falls, the contributing factors can be investigated and the reduction of autonomy occurs once the risk of falls is imminent to independent patients who go about their activities without help from third parties, to patients dependent on help from third parties who walks with the aid of a person and in wheelchair use or even bedridden patients with total dependence for transfer and exams, with or without risk factors (Gonçalves, Tourinho, 2012; Nascimento, Tavares, 2016). Graph 2 discriminates the factors that trigger the fall, as we see below: Although the etiology of falls is multifactorial, the physiological alterations of aging as diseases related to peripheral neuropathies, depressive states, Parkinson's, muscular weakness and atrophy, myopathies and dementias, as well as effects caused by the use of medications



Source: Hospital documents

Graphic 3. Time that the fall occurred

(antidepressants, hypnotics, psychotropic drugs, diuretics, hypoglycemic agents, antiarrhythmics, anticonvulsants, antiparkinsonians) cause dizziness, sedation, drowsiness, decreased activities and decreased neural activity. The balance can be impaired in relation to the oscillation in the body posture, causing environmental problems causing challenges for the elderly (Ministry of Health, 2013). The reasons for the fall of one's height may be related to domestic accidents, such as falling from the stairs, causing direct trauma by falling and making the elderly fragile after the event. Still, the weakness, the elderly in a post-dialysis situation, post neurosurgery, and preoperative are other factors predisposing to the fall, especially when the elderly come from the hospital bed, during the use of the bathroom, in the going and use of comadre / parrot or get out of bed for hygiene. Muscular weakness is closely related to functional deterioration, where the steps are slowed, they become slower and more dragged, the trunk protrudes forward providing instability, however, interfering with the balance and favoring the fall (Nascimento, Tavares, 2016). The process of getting sick in old age causes the elderly to experience some kind of fragility that hinders decision making autonomously, since adaptations to a new lifestyle often provoke anxiety, sadness, irritation, fear, and the reversal of roles. Some of the difficulties common to the hospitalized elderly are access to the toilet, the fecal elimination committed due to drug treatment, physical inactivity, among others; the aging process itself, irregular diet, emotional state, etc. (Nascimento, Tavares, 2016).

From this perspective, the decrease in muscular strength results in the alteration of the gait characterized by interaction of muscle forces, joint harmony and neural motor commands and, as far as the description of the phenomenon is concerned, promotes to the human being aspects of balance of daily activities, once affect the elderly cognitive instability. To that end, some people argue that advancing age is not a sufficient reason for impairment of functional capacity, but rather that aggregate diseases result in loss of autonomy for the elderly and physical disabilities (Nascimento, Tavares, 2016). Other factors such as structural issues in the hospital environment are worthy of attention, since high beds with low or no bars have a risk of falling, a situation that often occurs even though the nursing team has been asked to adapt, evidencing failure in the hospital quality process (Nascimento, Tavares, 2016).

The issue of changing the home environment, where the elderly are already accustomed to hospital, which requires adjustment can be a factor of stress, disorientation, confusion and agitation. Especially during the night, when they get up to go to the bathroom, they may believe that they are at home, drowsy or sometimes agitated by impositions, they quickly lose the notion of the environment in which they are inserted, predisposing to the fall (Nascimento, Tavares, 2016). Corroborating for rates of more frequent falls at night, graph 3 shows the times in which falls occurred among the elderly studied:

This situation in the hospital environment requires attention focused on the safety of the hospitalized elderly, being relevant the prevention of falls identifying the origin and proposing preventive actions. When analyzing the potential damages to the elderly as the occurrence of iatrogenies in daily care, it is necessary to evaluate each health professional involved in the care, in order to contribute to the improvement of patient safety quality (Nascimento, Tavares, 2016).

Quality programs in health services aim to promote environmental improvements by observing risk compliance standards, identifying them, implementing patient prevention and reassessment techniques for new risk factors. Inpatient safety establishes strategies for monitoring nursing services with the application of quality indicators directly related to falls, and may be related to care or specific processes. Assistance services are linked to nursing services, used as indicators of quality assessment in nursing; the specific ones are associated to the diseases and the immediate consequences that the patient suffers after the fall: bruising, laceration, fractures, tissue trauma, abrasion, emotional alterations, among others (Nascimento, Tavares, 2016). Considered as a limiting event in the elderly, falls are important as regards their prevalence in the public health area, with repercussions in the social context with high rates of morbidity and mortality in old age, as well as impacts on the quality of life. Due to its frequency in the elderly population, it is attributed a heavy burden of social responsibility, economic costs and overload for health systems (Vitorino *et al.*, 2017). The falls affect the patient's safety and arise in the face of a risk reduction scenario associated with care, resulting from the amount of damages related to health treatment, guaranteeing the development of

tools to prevent damages to individuals through new technologies the ascent (Vitorino *et al*, 2017). The health team is empowered to analyze these events, as well as through a qualified professional to implement preventive measures both with the elderly with falls, and those with difficulty in ambulation and balance.

The light of the theory portrays several types of interventions for the prevention of falls in the elderly that are classified in a single and multi component intervention evidencing the effectiveness of the actions (Vitorino, 2017). Nursing care appears before the implementation of the nursing process, privatizing the autonomy of the nurse professional to ensure continuity and quality of care (Guimarães *et al* 2013). In the hospital context, the multidisciplinary team must be attentive to develop activities to promote health for the elderly, together with the integration of services reaching the principles of health: universality, resolutivity, equity and completeness. With regard to the practice of nurses, it is important to identify the needs, defining characteristics and human reactions, through a complete anamnesis and physical examination where objective and subjective information is collected that prove the indexes or risk factors studied. Results of laboratory tests and family sources can not go unnoticed by bringing socio cultural information as well as details of the physical, mental, and economic conditions that the elderly may not be able to inform (Nascimento, Tavares, 2016). The nursing process has 5 stages; the first one based on the identification of basic human needs. Thus, the documentation of nursing practice systematizes the necessary conditions to notify the infirmities found and allow nurses to make their decisions by evaluating the consequences and directing the care (Nascimento, Tavares, 2016). The analysis and interpretation of the collected data are part of the second stage of the nursing process, based on the actions that can be performed according to the symptoms of the organic dysfunctions, identifying the priority needs of the elderly. Next, care planning should be based on previous steps to achieve the expected results, in order to allow the reassessment of the care that the elderly requires, thus monitoring health status, reducing risks and promoting the health care plan (Nascimento, Tavares, 2016). The prescriptions must contain actions to be assigned to those who are responsible for exercising and listed as a priority to follow up the evaluation of care, which corresponds to the fifth stage of the nursing process, where corrective measures are instituted during all stages of the process. the needs identified are effectively achieved. 16 The role of nurses in the care of the elderly should guide health conditions, minimizing the losses and limitations that aging predisposes to falls.

To that end, nursing action promotes the maintenance of motor and cognitive skills, health education, rehabilitation of functional capacity in carrying out its activities, independence and well-being, favoring the evaluation of the elderly, developing and accompanying the treatment with measures preventive measures to reduce the consequences of a fall (Nascimento, Tavares, 2016). The ambiance should be observed stimulating measures to suit and compensate the limitations imposed in the aging process, so it is indicated good ventilation and adequate lighting enabling the magnification of the visibility of the furniture in their own home, support for the arms, non-slip floors, as well as stimulation of ambulation even with the need to use walkers (Nascimento, Tavares, 2016). The guidelines related to the safe environment contribute to the prevention of falls and

occurrence of fractures highlighting the space according to the comfort and privacy, individuality of the subjects involved, production of subjectivity through reflection to a more humanized, welcoming and confident work processes (Nascimento, Tavares, 2016). The elderly should be guided by their individual conditions to carry out the activities of daily living in order to meet the composite measures within their limitations. In order to prevent fractures, the maintenance of the integrity of the musculoskeletal system stimulates structural strengthening, but its functioning depends on the muscular strength and flexibility caused by its physical decline, common to gait limitations, sources of pain, visual and auditory deficits (Nascimento, Tavares, 2016). Fall notification strategies serve to monitor causes and risk factors by analyzing information, feedback of results to professionals, and adoption of improvement actions aiming not only to build the history of the event but also to establish the goals and parameters of evaluation (Nascimento, Tavares, 2016).

Conclusion

The elderly are a population group vulnerable to multifactorial events such as falls, associated with both intrinsic and extrinsic causal elements, interfering with their functional capacity, independence, autonomy and quality of life. The fragility inherent to aging associated with environmental risks show that there is significant risk to fall during the stay of an elderly person in the hospital setting. Nursing actions aimed at promoting the safety of this public, in the hospital environment, should establish a plan of individual care, addressing risk classification for falls, environmental issues, awareness of caregivers and health staff involved in care.

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