

PREVALENCE OF INTRINSIC RISK FACTORS FOR PATIENTS IN FALL OUTCOMES IN A SURGICAL CLINIC*

Cristiane Ferraz da Silva¹, Suelen Reiniack², Bruna de Melo Souza³, Karinne Cristinne da Silva Cunha⁴

ABSTRACT: This study aimed to identify the prevalence of intrinsic fall risk factors during a patient's hospitalization. It also involved a search for records of patients' falls in January 2015 in a surgical hospitalization unit. Research was conducted from January to March 2015. Presence and absence of risk factors intrinsic to falling were considered. Five cases (5.1%) of falling were registered in 98 participants. Association of risk factors in patients that had fallen showed that 100% (5) of patients had risk factor of impaired vision, 80% (4) were more than 65 years old and had anemia. The principal focus was to reduce fall occurrences in the setting of this study. Future research intends to delve deeper on the subject of educational technology development in order to reduce the incidence of falling in the studied setting.

DESCRIPTORS: Accidental falls; Patient safety; Risk factors; Security measures; Nursing.

PREVALÊNCIA DOS FATORES DE RISCO INTRÍNSECOS AO PACIENTE E O DESFECHO QUEDA NA CLÍNICA CIRÚRGICA

RESUMO: Os objetivos do estudo foram identificar a prevalência dos fatores de risco de queda intrínsecos durante a internação do paciente e buscar os registros de queda de paciente no período de janeiro de 2015 em uma unidade de internação cirúrgica. Os participantes foram os pacientes da enfermaria cirúrgica de um hospital no Rio de Janeiro. A pesquisa foi realizada de janeiro a março de 2015. Considerou-se a presença ou ausência dos fatores de risco intrínsecos para queda. Foram registrados cinco (5,1%) casos de queda do total de 98 participantes. Associação dos fatores de risco no paciente que sofreu queda mostrou que 100% (5) dos pacientes tinham o fator de risco comprometimento da visão, 80% (4) apresentavam idade maior que 65 anos e anemia. O foco principal é reduzir os casos de queda no cenário de estudo desta pesquisa. Portanto, pesquisa futura pretende aprofundar o assunto entorno do desenvolvimento de tecnologia educacional para reduzir a incidência de queda no cenário de estudo.

DESCRIPTORIOS: Acidentes por quedas; Segurança do paciente; Fatores de risco; Medidas de segurança; Enfermagem.

PREVALENCIA DE LOS FACTORES DE RIESGO INTRÍNSECOS AL PACIENTE ASOCIADOS A CAÍDA EN LA CLÍNICA QUIRÚRGICA

RESUMEN: Fueron objetivos del estudio identificar la predominancia de los factores de riesgo de caída intrínsecos durante la internación del paciente, así como buscar los registros de caída de paciente en el periodo de enero de 2015 en una unidad de internación quirúrgica. Los participantes fueron los pacientes de la enfermería quirúrgica de un hospital en Rio de Janeiro. La investigación fue realizada de enero a marzo de 2015. Fue considerada la presencia o ausencia de los factores de riesgo intrínsecos para caída. Se registraron cinco (5,1%) casos de caída del total de 98 participantes. La asociación de los factores de riesgo del paciente que sufrió caída evidenció que 100% (5) de estos presentaban el factor de riesgo comprometimiento de la visión, 80% (4) tenían edad mayor que 65 años y anemia. El foco principal es reducir los casos de caída en el escenario de estudio de esta investigación. Por lo tanto, una investigación futura puede profundizar el asunto del desarrollo de tecnología educacional para reducir la incidencia de caída en el escenario de estudio.

DESCRIPTORIOS: Accidentes por caídas; Seguridad del paciente; Factores de riesgo; Medidas de seguridad; Enfermería.

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¹Nurse. Master's degree student in the Graduate Program in Hospital Health and Technology at the Federal University of Rio de Janeiro. Rio de Janeiro, RJ, Brazil.

²Nurse. Resident in Medical and Surgical Clinic at the Federal University of Rio de Janeiro. Rio de Janeiro, RJ, Brazil.

³Nursing undergraduate student. Federal University of Rio de Janeiro. Rio de Janeiro, RJ, Brazil.

⁴Nurse. PhD in Neuroimmunology. Professor at the Federal University of Rio de Janeiro. Rio de Janeiro, RJ, Brazil.

Corresponding author:

Cristiane Ferraz da Silva

Universidade Federal do Estado do Rio de Janeiro

R. Ibituruna 89 - 20271021 - Rio de Janeiro, RJ, Brasil

E-mail: cris_fs@yahoo.com.br

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● INTRODUCTION

Falls are described as a non-intentional body displacement to a level inferior to the initial position, caused by multifactorial circumstances, which may result in harm to the individual⁽¹⁾.

The Ministry of Health, along with the National Health Surveillance Agency (ANVISA) and Fiocruz (Oswaldo Cruz Foundation) published the Protocol for Fall Prevention in May 2013, which integrates the National Program of Patient Safety⁽¹⁾.

The Protocol for Fall Prevention is applied in hospitals, therefore it includes patients who receive care in this setting during their stay in all hospital spaces. The published protocol defines the evaluation of fall risk using a scale adequate to the patient's profile as an important intervention during the patient's admission to the hospital. Such an evaluation should also include the determining of specific predisposing factors that increase fall risk. This evaluation must be repeated every day until the patient is discharged from the hospital⁽¹⁾.

Incidence of fall in surgical environments is 12.4%, making it the most common adverse event among hospitalized patients. This can be mitigated by strategies of structural improvement in the hospital environment and by prevention programs⁽²⁾.

Measurement of fall risk by healthcare professionals is necessary in promoting preventive interventions, therefore it is essential that these fall risk factors are identified in order to avoid this health complication⁽³⁾.

Environmental risk factors, such as furniture disposition, type of floor surface, safety bars, and risk factors intrinsic to the patient regarding his/her walking and locomotion are related to each other but in some occasions are independent. Also, pre-operative and post-operative conditions interfere and modify fall risk.

This study involved patient's fall in a nursing room of a surgical clinic and the multifactorial aspects that cause its occurrence. Therefore, identification of risk factors, their prevalence and relational causes are essential in maintaining patient safety.

The subject choice is justified because patient's fall in a hospital environment may cause discomfort and injuries of variable severity to the patients. It may cause death or aggravate their clinical condition, depending on the extent of the problem. Besides, fall occurrence contributes negatively to the reputation of the institution.

Analysis of incidents related to patient's safety must be performed when there is a decrease in the quality level of the institution. Therefore, actions must be taken to correct errors and improve the work process⁽⁴⁾.

The objectives of this study were to identify the prevalence of intrinsic risk factors during a patient's hospitalization and search for the patient's fall records in January 2015 in a surgical hospital unit.

● METHOD

This was an epidemiological and cross-sectional study. Participants were patients hospitalized in the nursing room of a surgical clinic of a hospital in the city of Rio de Janeiro. All patients hospitalized in January 2015 composed the sample. Ninety-nine patients were hospitalized in total, only one was excluded.

Selection criteria of the sample were: patients in pre or post-operative condition in vascular surgical clinics, general surgery, neurosurgery, and surgery in proctology. Patients agreed to answer a questionnaire in the first step of the research. Exclusion criterion was the patient being under 18 years old.

Data collection occurred in three distinct steps: data collection on intrinsic risk factors of fall with a questionnaire developed based on the Protocol for Fall Prevention of the Ministry of Health (2013);

data collection on fall incidence according to the patient after he/she had been discharged from the hospital or via telephone after hospital discharge; data collection on fall incidence according to the studied scenario and fall notification record in the sector of Permanent Quality and Education of the Hospital.

In the first step of data collection for cognitive decrease, the interview was based on possible strategies to identify it, by asking the following questions, “What year is it? Where are we? Spell the word ‘world’ backwards. Show a watch and a pen. What is your name? Read the sentence and do as it says. “Close your eyes”.

To identify whether the participant had anxiety two questions were asked, “Do you have problems with concentration?”. The interviewer also observed if there were anxiety behaviors in the participant during the interview.

Some questions were asked regarding depression, such as: “Does he/she have visible sadness? Does he/she report sadness? Does he/she have sleep alterations? Does he/she have suicidal thoughts? Does he/she have pessimistic thoughts?”

Regarding fall risk factors which had to do with difficulty in conducting the activities of daily life in the nursing room, the participant was questioned about the following: taking a shower; using the bathroom; eating; get dressed; brushing hair and walking.

The first step of the research occurred in January 2015, step II in February and March 2015 and step III was simultaneous with steps I and II.

For analysis of variables, the statistical program R® was used in order to compute data and perform statistical calculation of absolute and relative frequency.

The referred master’s degree study was a field research that involved human beings, therefore it was submitted to a research ethics committee, and approved under protocol number 850.633 on 10/30/2014.

● RESULTS

Ninety-eight hospitalized patients were interviewed in total. They were interviewed in January 2015, on days that patients’ were admitted to hospital, which meant from Monday to Thursday, for total of 16 days. Five falls (5.1%) occurred during this period.

In this study, 36 (36.7%) of patients interviewed were more than 65 years old. There were four fall occurrences (80%) in which patients were elderly.

According to figure 1, the patient group that had no falls had a symmetrical distribution (median of 61 years-old) between ages, varying from 28 to 87 years old, with average of 60 years. Among the patient group that experienced fall, age varied from 45 to 84 years old, with a mean of 68 years and median of 69 years old.

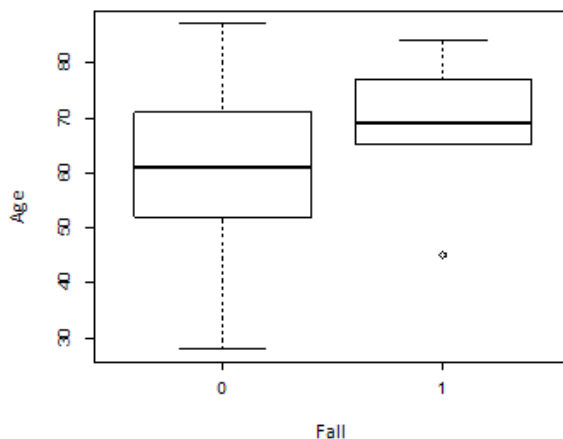


Figure 1 – Distribution by age of participants that experienced falls (0= absence of outcome; 1= outcome). Rio de Janeiro, RJ, Brazil, 2015.

Fall risk factors referring to psychocognitive analysis of individuals found one patient for cognitive decrease, (1%), 47 for anxiety (48%) and 26 (26.5%) with depression. In the fall record, three (60%) patients presented with anxiety and two had depression (40%). There were two patients that had depression related to anxiety and experienced falling.

In this study, postural hypotension was a fall risk factor in 34 (34.7%) participants, dizziness in 35 (35.7%), anemia in 26 (26.5%) and hypoglycemia in 20 (20.4%).

Postural hypotension, dizziness and hypoglycemia were prevalent in two (40%) participants that experienced fall. Anemia was found in four (80%) patients interviewed. Regarding postural hypotension and dizziness, one participant that experienced fall was under diuretic medication and had both risk factors.

Presence of insomnia was experienced by 41 (41.8%) of interviewed patients, only one experienced fall. From all the patients with incontinence or mictional urgency, 21 (21.4%) presented this risk factor, although two experienced falling. The patient with insomnia and fall outcome also reported incontinence and mictional urgency.

Regarding difficulty with daily life activities in the nursing room, which meant being able to perform activities like: taking a shower, eating, getting dressed, brushing hair and walking, 36 (36.7%) participants reported functional difficulty in performing some of these activities without help.

Three (60%) participants that experienced fall did not have functional difficulty and two (40%) had difficulty.

Joint problems were reported by 22 (22.2%) patients in the study. One patient that experienced fall had this risk factor. Regarding deformity in lower limbs, nine (9.1%) people had this physical alteration, and one patient that has fallen had this symptom. Both patients with fall records were hospitalized in a vascular clinic.

Sensorial impairment of the studied participant was assessed according to two criteria: decreased visual acuity and auditory loss. Seventy-three participants (74.5%) reported some kind of vision impairment, 16 (16.3%) reported hearing difficulties.

Vision impairment was present in five (100%) patients that experienced fall, although audition impairment was not reported.

Thirty-one (31.6%) participants interviewed reported difficulty in walking in the nursing room. Regarding the sample that experienced fall, two (40%) patients had impaired walking.

Polypharmacy (use of four or more medicines) was found in 44 (45%) of participants interviewed. The association of some medicines, time schedule and administration collaborated for fall risk.

Three patients (60%) that experienced fall were under four or more medications on the interview day.

Regarding the patient group that experienced fall, one patient was under diuretic medication, one used digoxin and benzodiazepine, other patient was using insulin, diuretic, antidepressant and antipsychotic. However, two patients that experienced fall were not under medications described in the data collection tool.

Report of previous fall is an important parameter to be assessed at the time of a patient's evaluation. Twenty-nine (29.6%) reports of fall previous to hospitalization were described. A total of three (60%) fall experiences had previous occurrences.

● DISCUSSION

In this study five (5.1%) fall occurrences were registered. During research developed in a neurosurgical unit, for seven months, eight patients (8.2%) experienced fall in a total of 97 samples⁽²⁾. The fall average in a university hospital during 30 months of notification and evaluation of adverse event report, was equal to 2.6 falls in a month⁽⁵⁾.

Risk factor related to age greater than 65 years was prevalent in 80% of fall occurrences. Falls, especially in the elderly, result in various factors that interacted. The most significant factors in hospitalized patients were: staggering walk, state of confusion, incontinence or need to use the bathroom in many situations, previous fall, use of sedatives and sleeping pills. Therefore, older people were more vulnerable to falling⁽⁶⁾.

A previous study conducted by another author corroborates data found in this study, which found that fall occurrences in ages equal or more than 60 years are more prevalent⁽⁵⁾. In a prospective cohort, 25% of falls occurred in patients with ages more than 65 years, and who were hospitalized in a neurosurgical unit and ICU⁽²⁾.

Regarding prevalence of risk factors such as depression and anxiety, a similar result was found in the study among patients hospitalized in nursing rooms of general surgery and pre-operative. There were 44.3% anxiety cases and 26.6% depression cases. Regarding pre-operative patients, it is common to find psychological symptoms such as anxiety and depression that are confused with symptoms of the disease that originated the surgical intervention⁽⁷⁾.

Postural hypotension was prevalent in 34.7% of participants. Scientific literature states that this symptom is common in the elderly, making them more vulnerable to falls. The elderly are capable of postural control, however with the presence of diseases that interfere in blood pressure regulation, the probability of postural instability is increased⁽⁸⁾.

Anemia was found in 80% of fall occurrences. Decrease of hemoglobin impairs oxygen transportation for all tissues, which reduces physical performance in anemic people⁽⁹⁾.

Regarding hypoglycemia as a fall risk factor, chronic degenerative diseases such as diabetes mellitus are considered long lasting and there is a possibility of acute alterations such as hyperglycemia or hypoglycemia, which can cause falls⁽¹⁰⁾.

Occurrence of insomnia and/or urinary urgency put the patient in fall risk because there is a higher chance of trying to leave the bed at night. Not recognizing the nursing room and bathroom makes the patient more vulnerable to fall occurrence. Worrying about calling nursing staff to help during visits to the bathroom exposes the patient to even more fall risk.

Insomnia is an antecedent of fall occurrence, because of sleepiness and bad sleep quality, which generates tiredness and dangerous movements. The patient may wander during the night. When this situation occurs in places with inadequate illumination or irregular and slippery floors, such as in the bathroom, fall risk is evident⁽¹¹⁾.

Urinary incontinence was an object of study in a university hospital. Prevalence of adults in the research scenario was 35%. This was more prevalent in clinical surgery, totaling 48% of the sample. In this study, 85.2% of patients woke up to urinate and 63% were able to reach the bathroom in time⁽¹²⁾.

In 60% of fall occurrences there was no functional difficulty, which contradicts data found in literature that justify this relation. An example is the study that showed 133 (66.5%) patients that experienced fall during hospitalization were incapable of or in need of help for self-care during hospital discharge⁽¹³⁾.

Seventy-six participants reported they did not need a walking stick or crutches to walk, although 22 (22.4%) needed these objects to help them out. Fall occurred in two (40%) patients that used these helping devices, both were elderly and had difficulty in performing daily life activities.

Help during walking can be offered in other ways, such as with the help of a healthcare professional, use of a walker and holding on to furniture and/or wall. Use of crutch/walking stick/walker was described in a prospective cohort study in a large hospital. From the total patients that used these devices (4.3%), four (16.7%) experienced fall during hospitalization⁽¹⁴⁾.

Vascular disease is described as a fall risk factor, as are foot problems. Incidence of vascular disease was equal to 15.8% and foot problems 10.5% according to a study conducted with an elderly group in a health center⁽¹⁵⁾.

The variable regarding foot problems was described as a fall risk factor in elderly patients that experienced strokes in rehabilitation associations. Callus, ingrown nails or feet deformity were

alterations that were considered, resulting in the prevalence of 36.6% in the sample⁽¹⁶⁾.

Visual impairment can lead to fall directly by reducing postural stability, or indirectly by reducing mobility and physical function⁽¹⁰⁾. Statistical association between vision impairment and fall occurrence was described in a study where, among patients that had fallen, 88.6% had this grievance⁽¹⁴⁾. Thus, the risk factor of vision impairment was found in the present study in 100% of the sample that experienced fall as a predisposing factor. Therefore, it must be seen as an important parameter assessed during hospitalization, in order to establish prevention measures for this impairment.

Decrease of auditory sensibility generates vertigo and difficult postural control, especially when performing sudden movements and direction changes, raising fall occurrences⁽⁸⁾.

Regarding the patient who experienced a fall, it is important to review the medications used in order to alter or suspend them if possible, with the intention of preventing new fall occurrences. Patients that use four or more medications must be watched closely as well as those under psychotropics. So, it is essential that the nurse monitors fall risk if the patient begins to use psychotropics during hospitalization, for three days consecutively⁽¹⁷⁾.

Report of previous fall was present in 29.6% of total interviewed patients. A similar number was described in a published study that found 21.6% of hospitalized people with a history of previous fall⁽²⁾.

The Ministry of Health⁽¹⁾ indicated specific predisposing factors that raise fall risk. In total, 26 factors are described. The principal focus is putting into practice ideas of the Protocol for Fall Prevention of the Ministry of Health⁽¹⁾ and reduce fall occurrences in the studied scenario of this research. To facilitate this, a future study aims to delve deeper into the subject of educational technology development to reduce incidence of fall in the studied scenario.

Construction and validation of identification tools for patients with fall risk using presence of factors is essential in guiding nursing work in order to promote actions that focus on fall prevention⁽¹⁸⁾.

Building educational technology will be the training model for nursing staff of a surgical clinic. This technology will focus on the most prevalent risk factors that cause accidents in this scenario. It will also focus on the clinical profile of the patient, prevention strategies based on structural and professional reality, and availability of resources.

● FINAL CONSIDERATIONS

Regarding prevalence of risk factors in the studied sample, the average number among patients who experienced fall was nine, varying among 17 factors in one case and two in the other. Rate of falls in the collection month was 5.1%. Although when the study was conducted in the scenario of data collection, it was possible to identify flaws in the notification process of fall occurrence, because none of the fall occurrences were notified in an adequate way, therefore, there could be an occurrence of underreporting.

Prevalence of intrinsic risk factors is necessary, aimed at establishing a patient profile in a surgical clinic, even without an institutional scale to assess fall risk in the studied scenario. The correct evaluation of a patient at the time of hospitalization is essential, and also in the days until hospital discharge, in order to reduce fall occurrences.

Association of risk factors in patients who experienced fall showed that 100% (five) patients had risk factor of impaired vision, 80% (four) were older than 65 years and had anemia, 60% (three) had anxiety, were under four or more medications and had a previous history of fall.

This study will contribute to scientific publications in the area, promoting incentive and helping intervention practices in other health institutions. It will contribute in strengthening fall prevention in various hospital environments in Brazil, and to the discovery of real factors that lead Brazilian patients to fall, because most studies are performed outside the country, and represent a different reality.

This study had as its limitation the difficulty in obtaining fall records in the studied scenario, because the standard notification record was not used to report the adverse event.

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