

CONTEXT OF FALLS NOTIFIED IN A UNIVERSITY HOSPITAL

CONTEXTO DE QUEDAS NOTIFICADAS EM UM HOSPITAL UNIVERSITÁRIO

EL CONTEXTO DE LAS CAÍDAS NOTIFICADAS EN UN HOSPITAL UNIVERSITARIO

Sabrina Daros Tiensoi¹
Marina da Cruz Moreira²
Sara Monteiro de Moraes³
Fernanda Penido Matozinhos⁴
Flávia Sampaio Latini Gomes⁴

How to cite this article: Tiensoi SD, Moreira MC, Moraes SM, Matozinhos FP, Gomes FSL. Context of falls notified in a university hospital. Rev baiana enferm. 2019;33:e32590.

Objective: to analyze the circumstances of falls reported in a high-complexity university hospital. **Method:** a descriptive study with a quantitative approach, conducted in a university hospital. Data collection was performed from January 2015 to July 2016, using the secondary data, and in October 2016. The median was calculated for continuous variables with non-normal distribution and frequencies and proportions were calculated for categorical variables. **Results:** the incidence rate of falls was 2.21% per month. Falls were more frequent in the age group 60 years old or older (42.86%) and 20 to 59 years old (70.00%), in the morning shift (47.37%) and in people with diseases's circulatory system (35.71%). The professionals who most reported falls were nurses. **Conclusion:** the circumstances of falls reported in a high-complexity university hospital were assessed in most cases and were more frequent in male patients, aged 60 years old or older, with cardiovascular disease, using antihypertensive drugs and diuretics. In addition, it was noted that there is potentially underreporting of falls in the institution.

Descriptors: Accidents by Falls. Patient Safety. Nursing.

Objetivo: analisar as circunstâncias das quedas notificadas em um hospital universitário de alta complexidade. *Método:* estudo descritivo, com abordagem quantitativa, realizado em um hospital universitário. A coleta de dados foi realizada de janeiro de 2015 a julho de 2016, por meio dos dados secundários, e em outubro de 2016. A mediana foi calculada para as variáveis contínuas com distribuição não normal e as frequências e proporções foram calculadas para as variáveis categóricas. *Resultados:* a taxa de incidência de quedas foi de 2,21% ao mês. As quedas foram mais frequentes na faixa-etária de 60 anos ou mais (42,86%) e 20 a 59 anos (70,00%), no turno da manhã (47,37%) e em pessoas com doenças do sistema circulatório (35,71%). Os profissionais que mais notificaram quedas foram enfermeiros. *Conclusão:* as circunstâncias das quedas notificadas em um hospital universitário de alta complexidade foram avaliadas na maioria dos casos e foram mais frequentes em pacientes do sexo masculino, com 60 anos ou mais, com doenças cardiovasculares, em uso de anti-hipertensivos e diuréticos. Além disso, notou-se que potencialmente existe subnotificação de quedas na instituição.

Descritores: Acidentes por Quedas. Segurança do Paciente. Enfermagem.

¹ Nurse. Master in Nursing. Universidade Federal de Minas Gerais. Belo Horizonte, Minas Gerais, Brazil. sabrinadaros@hotmail.com

² Nurse. Multiprofessional resident in Obstetric Nursing at the Minas Gerais State Hospital Foundation. Belo Horizonte, Minas Gerais, Brazil.

³ Physician. Master in Adult Health. Physician, Clinical Hospital, Universidade Federal de Minas Gerais. Belo Horizonte, Minas Gerais, Brazil.

⁴ Nurse. PhD in Nursing. Professor at Universidade Federal de Minas Gerais. Belo Horizonte, Minas Gerais, Brazil.

Objetivo: analizar las circunstancias de las caídas notificadas en un hospital universitario de alta complejidad. Método: estudio descriptivo con enfoque cuantitativo realizado en un hospital universitario. Los datos se recolectaron de enero de 2015 a julio de 2016, por medio de los datos secundarios, y en octubre de 2016. Se calculó la mediana para las variables continuas con distribución no normal, y se calcularon frecuencias y proporciones para las variables categóricas. Resultados: el índice de incidencia de caídas fue de 2,21% por mes. Las caídas fueron más frecuentes en los grupos etarios de 60 años o más (42,86%) y de 20 a 59 años (70,00%), en el turno de la mañana (47,37%) y en personas con enfermedades circulatorio (35,71%). Los profesionales que notificaron más caídas fueron los enfermeros. Conclusión: las circunstancias de las caídas notificadas en un hospital universitario de alta complejidad se evaluaron en la mayoría de los casos, y fueron más frecuentes en pacientes de sexo masculino, de al menos 60 años, con enfermedades cardiovasculares, y en tratamiento con anti-bipertensivos y diuréticos. Además, se notó que existe un potencial de subnotificación de caídas en la institución.

Descriptor: Accidentes por Caídas. Seguridad del Paciente. Enfermería.

Introduction

Falls can be defined as an unintentional displacement of the body to a lower level from its initial position, commonly going to the ground, which may result in some damage⁽¹⁾. It is estimated that 424,000 fatal falls occur worldwide each year, making them the second leading cause of unintentional death after traffic accidents⁽²⁾.

This can be the result of several causes, such as cognitive disability, use of medications, presence of some diseases, sensory and functional impairment, in addition to demographic reasons⁽¹⁾. Thus, in any age group can be verified for falls; however, children under five years old and the elderly are more prone to falls. Among the elderly, falling is one of the most common causes of limiting damage and disability, leading even to death⁽³⁾.

Thus, in health care, falls are considered adverse events (AEs), i.e., incidents that result in health damage⁽¹⁾, although they are preventable errors. In hospitals, falls are one of the main causes of adverse events, reaching 70% of them all. Of these in-hospital events, 30% may result in physical injuries and 4% to 6% in serious injuries⁽⁴⁾.

In Brazil, in 2013, the National Patient Safety Program (*Programa Nacional de Segurança do Paciente*, PNSP) was created, of which the Fall Prevention Protocol is an integral part⁽¹⁾. This protocol recommends that a safe care setting be ensured, education strategies promoted, falls be

reported, and the patient assessed and treated immediately to mitigate possible harms⁽¹⁾.

Notification of cases by health professionals enables safer care to be provided, as it enables staff to access information related to the cause of the event, to propose indicators and to adopt measures of improvement⁽¹⁾.

In addition, the PNSP provides for notifications to be made to the National Health Surveillance Notification System (Notivisa), capable of generating data necessary for the periodic publication and dissemination of newsletters by the National Health Surveillance Agency (*Agência Nacional de Vigilância Sanitária*, Anvisa)⁽⁵⁾. Case analysis may be performed in isolation or in aggregate by this Agency which, in its discretion, may request the health institution to detail a particular case⁽⁵⁾.

Considering that this is a recent practice in health institutions and is non-punitive, notifications over the years have been more frequent, but there are still places where there is underreporting. Of these, the state of Minas Gerais has the largest number of reported incidents, as well as the registered Patient Safety Centers. From March 2014 to June 2019, throughout Brazil, Notivisa received 36,452 reports of patient falls, being the second most reported adverse event and the second most related to death⁽⁶⁾.

Seeking to understand the notification of this incident in a hospital institution, this study aimed

to analyze the circumstances of falls reported in a high-complexity university hospital.

Method

This is a descriptive study with a quantitative approach to incident cases, conducted in a large university hospital in the Southeast region of Brazil. In addition to being considered a municipal and state health referral hospital in the care of patients with medium and high complexity diseases, teaching, research and extension activities are developed. Integrated into the Unified Health System (*Sistema Único de Saúde*, SUS), it serves a universalized and exclusive clientele of this system⁽⁷⁾. The functional units covered in the study were the following: Medical Clinic, Surgical Clinic, Pediatrics, Adult Intensive Care – Treatment and Intensive Therapy Center (TITC) and Coronary Unit (COU) –, Emergency Room (ER) and Diagnostic Support and Imaging Therapy (DSIT).

The study population consisted of all patients reported by incidents and AEs recorded in the hospital's computerized system (n=63 notifications), and the sample consisted of 42 notifications, all related to the fall event. All patient notifications included related to falls, in which the "record" field was filled. Twenty-one notifications that did not contain the duly completed "record" field or that, according to the case description, did not actually fall, were excluded according to the definition of the World Health Organization (WHO)⁽²⁾.

Data collection occurred at two different times: the first, from January 2015 to July 2016, through secondary data from fall-related adverse event notifications received by the Institution's Patient Safety Nucleus (*Núcleo de Segurança do Paciente*, NSP). Based on the patient's registration number, it was possible to access the medical record and to review the records in order to obtain information about the context of the fall.

The variables used in the study were the following: gender, age, circumstances of the fall (type, shift, functional unit, and place of occurrence), causes, primary and secondary

medical diagnoses, intravenous therapy and continuous medication, assessment of fall risk, damage and consequence of the damage, conduct of the team after the fall, notifying professional and record of the fall in medical records. In cases where the event was notified by more than one professional, it was considered only one event and all professionals who notified it.

The second moment of data collection took place to identify the number of falls that occurred in October 2016 in the study institution. The researchers, daily, actively searching, collected information about the occurrence of falls of patients in each unit based on the report of the nurse responsible. This month, the occurrence of 10 falls was recorded. The variables used were the following: gender, age group and circumstances of the fall (type, shift, functional unit and place of occurrence).

In this study, the incidence rate of falls during the study period was calculated. Data on patient-day rate and number of hospitalizations were provided by the hospital's Medical and Statistical Archiving Service (*Serviço de Arquivamento Médico e Estatístico*, SAME). Data was analyzed using the *Stata* program, version 14.0 (*StataCorp*, Texas, USA). The median was calculated for continuous variables with non-normal distribution. In addition, frequencies and proportions were calculated for categorical variables.

The study was approved by the Research Ethics Committee of the Federal University of Minas Gerais, under Opinion no. 1,619,939.

Results

The incidence rate of falls from January 2015 to July 2016 was 2.21 falls per month. The overall rate of falls of the 42 patients reported during the study period was 0.15 per 1,000 patients in all sectors of the hospital.

Of the 42 forms analyzed in the study, it was observed that the most frequent reports of falls were in male patients (54.76%), aged 60 years old or older (42.86%), with a median age of 48.5 years old (IQ: 19-65). The shift with the

highest occurrence of falls was the morning one (47.37%), in the clinical and surgical functional units (both with 26.19%). Regarding the type of fall, most were from their own height (40.48%), followed by crib/bed (21.42%) and shower chair (14.29%). The most frequent locations were

bathroom (35.71%) and ward/bedroom (33.33%) (Table 1). It should be clarified that the total number of patients may not be the same for the variables studied, due to the different response rates.

Table 1 – Proportion of patients who had reported falls, according to the circumstances of their occurrence (type, shift, functional unit and location). Belo Horizonte, Minas Gerais, Brazil – 2015-2016 (n=42)

Variables	n	%
Type of fall	42	100.00
Own height	17	40.48
Bed/Crib	9	21.43
Shower chair	6	14.29
Stretch	5	11.90
Chair	3	7.14
Toilet	1	2.38
Wheelchair	1	2.38
Fall occurrence shift*	38	100.00
Morning	18	47.36
Afternoon	10	26.32
Evening	10	26.32
Functional unit	42	100.00
Medical clinic	11	26.19
Surgical clinic	11	26.19
Pediatrics	8	19.05
Emergency room	8	19.05
Diagnostic Support and Imaging Therapy	3	7.14
Adult intensive care	1	2.38
Fall occurrence place	42	100.00
Bathroom	15	35.72
Ward/Room	14	33.33
Aisle	8	19.05
Examination room	4	9.52
Emergency room	1	2.38

Source: Created by the authors.

* Data was not present on all forms notified by falls.

Most reported falls were caused by loss of balance (26.92%), disorientation (17.31%), equipment failure/misuse (17.31%) and weakness (15.38%).

Regarding the main medical diagnosis of the patients, considered as primary, the most frequent diseases among those who fell were those of the circulatory system, representing 35.71% and neoplasms, 23.81%. Regarding the secondary

diagnoses, hypertension was the most frequent comorbidity among the patients (26.56%), followed by diabetes and neurological disorders (both with 12.50%).

Most patients used intravenous therapy (78.57%). Regarding the medications in use, antihypertensive agents were the most used (50.00%), followed by diuretics (32.14%) (Table 2).

Table 2 – Proportion of reported falls among patients according to major and minor medical diagnoses, intravenous therapies, and continuous use medications. Belo Horizonte, Minas Gerais, Brazil – 2015-2016 (n=42)

Variables	n	%
Primary medical diagnoses *	43	100.00
Cardiovascular diseases	15	34.88
Neoplasms	10	23.80
Diseases of the digestive system	4	9.30
Diseases of the respiratory tract	3	6.98
Others (Acquired Human Immunodeficiency Syndrome, sepsis, medical complications)	3	6.98
Nervous system disorders	2	4.65
Urinary tract diseases	2	4.65
Diseases of the musculoskeletal system	2	4.65
External causes	2	4.65
Secondary diagnoses*	64	100.00
Arterial hypertension	17	26.56
Diabetes <i>mellitus</i>	8	12.50
Neurological disorders	8	12.50
Thyroid diseases	7	10.94
Chronic kidney disease	7	10.94
Cardiovascular diseases	6	9.38
Vision related diseases	2	3.12
Respiratory diseases	2	3.12
Autoimmune diseases	2	3.12
Neoplasms	2	3.12
Other (obesity, Down syndrome, amyloidosis)	3	4.69
Intravenous therapy	42	100.00
Yes	33	78.57
No	9	21.43
Continued use medication**	28	100.00
Antihypertensives	14	50.00
Diuretics	9	32.14
Tranquilizers	3	10.71
Narcotics/Opiates	1	3.57
Tricyclic antidepressants	1	3.57

Source: Created by the authors.

* The same patient may present more than one category of the variable.

** Not all patients were on medication.

About the assessment of the risk of falling, the notifier reported that it was performed by the team in 80.00% of cases. It was observed that there was no difference between notifications with or without damage. However, among those with harms, most were related to non-serious damage (73.68%). Of the 42 falls reported, one resulted

in the patient's death. After the occurrence of the fall, the most frequent conduct was medical evaluation (45.71%) and the patient was kept under observation (19.00%). The professional who most reported falls was the nurse (69.77%). Of the falls analyzed, 66.67% were recorded by some professional in the patient's chart (Table 3).

Table 3 – Proportion of falls reported among the patients, according to risk assessment, harm occurrence, consequence of the harm, health team conduct, notifying professional and medical record. Belo Horizonte, State of Minas Gerais, Brazil – 2015-2016 (n=42)

Variables	n	%
Fall risk assessment	30	100.00
Yes	24	80.00
No	6	20.0
Harm occurrence	38	100.00
Yes	19	50.00
No	19	50.00
Harm consequence	19	100.00
Not serious	14	73.68
Caused temporary disability	4	21.05
Death	1	5.26
Health team conduct after the fall*	70	100.00
Medical evaluation	32	45.71
Patient kept under observation	19	27.14
Image exam performed	11	15.71
Nurse's assessment	7	10.00
Electroneuromyography performed	1	1.43
Notifying professional*	43	100.00
Nurse	30	69.77
Nursing Technician	4	9.30
Doctor	3	6.98
Physiotherapist	1	2.33
Others**	5	11.63
Record of fall on the chart	42	100.00
Yes	28	66.67
No	14	33.33

Source: Created by the authors.

* The same patient may present more than one category of the variable.

** Includes: pharmacist, student, radiology technician, multiprofessional resident and medical resident.

As a result of the second part of the study, 10 falls were identified through active search of medical records. There was no difference between male and female (both with 50.00%) and the event was more frequent in the 20-59 year age group, with 70.00% of the notifications.

Regarding the type of fall, most were from their own height (90.00%). The shift with the highest occurrence of falls was in the morning (60.00%), in the clinical medical (50.00%) and emergency room (30.00%) functional units, and the most frequent places were the ward (50, 00%) and bathroom (40.00%) (Table 4).

Table 4 – Proportion of patients who had reported falls, according to the circumstances of their occurrence (type, shift, functional unit and location). Belo Horizonte, Minas Gerais, Brazil – Oct. 2016 (n=10) (continued)

Variables	n	%
Type of fall	10	100.00
Own height	9	90.00
Chair	1	10.00

Table 4 – Proportion of patients who had reported falls, according to the circumstances of their occurrence (type, shift, functional unit and location). Belo Horizonte, Minas Gerais, Brazil – Oct. 2016 (n=10) (conclusion)

Variables	n	%
Fall occurrence shift	10	100.00
Morning	6	60.00
Evening	3	30.00
Afternoon	1	10.00
Functional unit	10	100.00
Medical clinic	5	50.00
Emergency room	3	30.00
Surgical clinic	2	20.0
Location of fall	10	100.00
Ward	5	50.00
Bathroom	4	40.00
Aisle	1	10.00

Source: Created by the authors.

Discussion

Falls are part of the major preventable adverse events in health care facilities⁽⁶⁾. In 2019, in a report published by the ANVISA on health care-related adverse events, reported by 4,549 Patient Safety Centers in Brazil, falls were the second most reported adverse event from March 2014 to June 2019⁽⁶⁾.

In another university hospital in southern Brazil, the incidence of falls among adult patients from 2011 to 2015 were, respectively, 1.61 falls/1,000 patients; 2.03 falls/1,000 patients; 1.83 falls/1,000 patients; 1.62 and 1.42 falls/1,000 patients⁽⁸⁻⁹⁾. In this study, the results showed that the incidence of falls reported from 2015 to 2016 was 0.15 falls/1,000 patients.

The lower occurrence of falls may be indicative of care quality⁽¹⁾. However, the incidence of falls found in this study may suggest underreporting of this adverse event in the institution. This fact can be reinforced when comparing the occurrence of reported falls in 18 months with those reported by professionals during active search for one month (3.32 per month). Underreporting is not always intentional, but may be related to the professionals' lack of knowledge about the importance of AE notification, as well as

to fearing a punitive culture in the institutions, impairing the improvement process⁽⁵⁾.

Regarding the characteristics of the patients who had reported falls, it was observed that most were male and aged 60 years old or older. Regarding gender, studies have shown similar results and pointed out that the fact that more falls occur in men may be related to cultural factors, such as men's greater difficulty in asking and accepting help in performing their daily activities⁽¹⁰⁻¹¹⁾.

About age, it is known that advancing age triggers a series of physiological changes, considered risk factors for the occurrence of falls, more frequent in this age group^(1,9,11). Commonly observed factors are those related to postural instability, gait disturbance, functional disability and polypharmacy⁽⁹⁾.

To understand the reporting of falls at the study site (a large university hospital), it was important to analyze the context in which the event occurred. The shift with the highest occurrence of reported falls was in the morning, which differs from other studies that report nighttime as the most frequent^(9,11). It is noteworthy that the morning may present risks, since it is the time of day when most procedures and health care are performed with patients, such as: bath, medications, tests and stimulation, whenever possible, stimuli to

autonomy of the patient when developing their activities. In the case of a teaching hospital, such as the study hospital, in the mornings the largest number of students in clinical education are also concentrated, increasing the activities and procedures performed with the patients and, consequently, their transfers between bed, chair, stretcher and others.

Regarding the site of the reported fall, there was a higher occurrence in the medical and surgical clinics. These two units correspond, in the institution, to most beds available in the inpatient sectors and receive patients from various specialties, such as cardiology, neurology, transplantation, oncology and orthopedics. The higher occurrence of falls in clinical and surgical inpatient units may be justified by the patient's long stay, advanced age and greater complexity of care^(6,8,11).

Although intensive care units are the most critical sectors of the hospital, with critically ill patients, they are also the sectors with the greatest vigilance by professionals⁽¹¹⁾. In addition, the patient tends to have greater restriction, especially in relation to their mobility and ambulation, remaining in the bed, protected by bars.

In this study, most of the reported falls were from their own height and occurred in the bathroom and ward/room. Falling from one's own height was the most frequent type of fall in other studies^(9,12) and may be related to patient intrinsic factors such as disorientation, cognitive disability, weakness, medication use, and comorbidities⁽¹³⁾. It is worth remembering that there was no report of the presence of obstacles or slippery floor in the notifications of falls during the study period, which may be an indication that the fall from one's own height was related to the patient's intrinsic factors.

As for the places, the ward/room and the bathroom are the most used by patients during the hospitalization period and, therefore, it is common to be pointed out as the most frequent occurrence of this type of adverse event^(6,9,11). Of the 36,452 reports of falls nationwide received by the Anvisa from March 2014 to June 2019,

21,296 (58%) of these occurred in the bedroom and bathroom⁽⁶⁾.

Another important variable to understand the context of the reported falls was the continued use of medications. The most frequently used drugs by patients whose notifications comprised the sample were antihypertensive and diuretics, agreeing with other authors^(1,9,14). Hypertensive agents and diuretics are drugs often used to treat high blood pressure and in cases of cardiovascular disease. Its effects are prone to falls due to the high risk of orthostatic hypotension or even decreased cerebral blood flow, with loss of consciousness⁽⁹⁾. Diuretics are still related to urinary urgency, requiring patient agility to access the bathroom and may increase their risk of falling.

Cardiovascular diseases, in this study, were the most frequent diagnosis of patients who suffered falls, as well as hypertension was the most common comorbidity among them, which is related to the mentioned drugs.

Other classes of drugs associated with the risk of falls are those that act on the central nervous system, such as tricyclic antidepressants, tranquilizers and narcotics/opiates⁽¹⁵⁾. In the present study, few patients were taking these classes of medications at the time of their fall.

Diabetes was the second most common comorbidity among patients who had a reported fall. The use of hypoglycemic medication and complications of the disease, such as diabetic neuropathy and polyuria, may be considered factors that increase the risk of falls, as they may lead to fainting and cause gait instability^(1,16).

The extrinsic factors observed in this study as a cause of falls are those related to the use of gait assisting devices. Considering that the extrinsic factors are modifiable, it is of fundamental importance that there is a complete description by the notifiers of the problems presented by the equipment or its relationship with the adverse event. This way, the NSP team will be able to plan and implement timely prevention measures for this type of occurrence.

In this study, among the patients who suffered some kind of damage due to the fall,

those reported as non-serious, that is, that did not cause or prolonged the hospitalization time, were the most frequent. It is noted that falls lead to serious damage in 20% to 30% of the cases⁽¹³⁾. In this study, five serious injuries occurred; of these, one (5.26%) was fatal.

The nurse was the professional who most reported falls during the study period. The nursing staff is closer to the patient and therefore more likely to experience falls. In addition, these may be the professionals most frequently asked to assist in the event. However, it was observed in this study that, compared to the physician, the nurse was not the professional who most evaluated the patient immediately after the fall (45.7% and 10.0% of the reported cases, respectively) or did not recorded the evaluation, if performed.

Finally, given the various situations that lead to falls in hospitalized patients, it is essential to assess and identify the risks that involve the patient to promote their prevention. In this study, 80.0% of the patients were assessed for the risk of falling; however, the actions taken by the sectors involved were not effective to mitigate the event. One of the alternatives to perform this assessment more effectively is through the Morse Scale, which has been shown to be effective in identifying the risk of patients falling⁽¹⁴⁾.

The number of notifications analyzed was a limiting factor of this study. This was due to the underreporting that is likely to occur in the institution previously mentioned, as well as to losses resulting from incomplete or incorrect filing of notification forms. Therefore, continuing education actions are needed to assist professionals in identifying fall risks, their main forms of prevention and adequate notification of all events, thus contributing to reducing fall rates and increasing patient safety and improving the quality of care in health services.

Conclusion

Falls were more frequent in male patients, aged 60 years old or older, with cardiovascular disease, using antihypertensive drugs and

diuretics. The professionals who most reported falls were nurses and there was no difference between patients who suffered harms or not.

Most patients were evaluated for the risk of falling, but the actions developed were not fully effective. In addition, it was noted that there is a potential underreporting of falls in the institution. Therefore, it is necessary to establish strategies that ensure the reporting of adverse events on a perennial basis.

Collaborations:

1 – conception, design, analysis and interpretation of data: Sabrina Daros Tiensoli, Marina da Cruz Moreira, Sara Monteiro de Moraes and Flávia Sampaio Latini Gomes;

2 – writing of the article and relevant critical review of the intellectual content: Sabrina Daros Tiensoli, Fernanda Penido Matozinhos and Flávia Sampaio Latini Gomes;

3 – final approval of the version to be published: Sabrina Daros Tiensoli and Flávia Sampaio Latini Gomes.

References

1. Brasil. Ministério da Saúde. Agência Nacional de Vigilância Sanitária. Fundação Oswaldo Cruz. Protocolo prevenção de quedas. Brasília, DF; 2013.
2. World Health Organization. Falls: Fact Sheet [Internet]. Genebra; 2012 [cited 2019 Oct 2]. Available from: <http://www.who.int/mediacentre/factsheets/fs344/en/>
3. Oliveira DU, Ercole FF, Melo LS, Matos SS, Campos CC, Fonseca EAM. Avaliação de quedas em idosos hospitalizados. Rev enferm UFPE on line. 2017;11(Supl. 11):4589-97. DOI: 10.5205/reuol.11138-99362-1-SM.1111sup201707
4. Anderson DC, Postler TS, Dam TT. Epidemiology of hospital system patient falls: a retrospective analysis. Am J Med Qual. 2015;31(5):423-8. DOI: 10.1177/1062860615581199
5. Brasil. Agência Nacional de Vigilância Sanitária. Gestão de riscos e investigação de eventos adversos relacionados à assistência à saúde. Brasília, DF; 2017.

6. Brasil. Agência Nacional de Vigilância Sanitária. Relatórios dos Estados – eventos adversos [Internet]. 2019 [cited 2019 Oct 7]. Available from: <https://www20.anvisa.gov.br/segurancadopaciente/index.php/publicacoes/category/relatorios-dos-estados>
7. Universidade Federal de Minas Gerais. Hospital das Clínicas da UFMG: institucional [Internet]. Belo Horizonte; 2019 [cited 2019 Oct 7]. Available from: <http://www2.ebserh.gov.br/web/hc-ufmg/>
8. Luzia MF, Cassola TP, Suzuki LM, Dias VLM, Pinho LB, Lucena AF. Incidence of falls and preventive actions in a University Hospital. *Rev Esc Enferm USP*. 2018;52:e03308. DOI: 10.1590/s1980-220x2017024203308
9. Barbosa AS, Chaves EHB, Ribeiro RG, Quadros DV, Suzuki LM, Magalhães AMM. Caracterização dos incidentes de quedas de pacientes adultos internados em um hospital universitário. *Rev Gaúcha Enferm*. 2019;40(esp):e20180303. DOI: <https://doi.org/10.1590/1983-1447.2019.20180303>
10. Sousa KAS. Quedas de pacientes em um Hospital Público de Ensino [dissertação]. Belo Horizonte: Escola de Enfermagem, Universidade Federal de Minas Gerais; 2014.
11. Caveião C, Sales WB, Montezeli JH, Sena EM, Loureiro GM, Avanci MATM. Perfil clínico e consequências decorrentes de quedas em hospital universitário no Sul do Brasil. *Rev Saúde Desenv*. 2018[cited 2019 Oct 7];12(10):183-96. Available from: <https://www.uninter.com/revistasaude/index.php/saudeDesenvolvimento/article/view/877/506>
12. Nomura ATG, Graeff MF, Pruinelli L, Almeida MA. Incidence of falls in a general hospital in Southern Brazil. *Stud Health Technol Inform*. 2019;264:1741-2. DOI: 10.3233/SHTI190625
13. Luzia MF, Victor MAG, Lucena AF. Diagnóstico de enfermagem risco de quedas: prevalência e perfil clínico de pacientes hospitalizados. *Rev Latino-Am Enfermagem*. 2014;22(2):262-8. DOI: 10.1590/0104-1169.3250.2411
14. Urbanetto JS, Creutzberg M, Franz F, Ojeda BS, Gustavo AS, Bittencourt HR, et al. Morse Fall Scale: tradução e adaptação transcultural para a língua portuguesa. *Rev Esc Enferm USP*. 2013;47(3). DOI: 10.1590/S0080-623420130000300007
15. Ribeiro TB, Melo DO, Maia FOM, Ribeiro E. Medication-related inpatient falls: a critical review. *Braz J Pharm Sci*. 2018; 54(1):e17355. DOI: 10.1590/s2175-97902018000117355
16. Najafpour Z, Godarzi Z, Arab M, Yaseri M. Risk factors for falls in hospital in-patients: a prospective nested case control study. *Int J Health Policy Manag*. 2019;8(5):300-6. DOI: 10.15171/ijhpm.2019.11

Received: July 29, 2019

Approved: October 17, 2019

Published: March 16, 2020



The *Revista Baiana de Enfermagem* use the Creative Commons license – Attribution -NonComercial 4.0 International. <https://creativecommons.org/licenses/by-nc/4.0/>

This article is an Open Access distributed under the terms of the Creative Commons (CC BY-NC). This license lets others remix, adapt and create upon your work to non-commercial use, and although new works must give its due credit and can not be for comercial purposes, the users do not have to license such derivative works under the same terms.