

PATIENT SAFETY AND FALLS IN THE HOSPITAL ENVIRONMENT*

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ABSTRACT: This is a cross-sectional and quantitative study with the aim to investigate patient safety regarding falls in the hospital environment, as reported by elderly patients. The study was carried out with 127 elderly patients of a teaching hospital in Curitiba, Paraná, between April and July 2013. Semi-structured interviews, descriptive analyses and Fischer's exact test were used. Results pointed that 69 individuals (55.2%) reported the absence of risks of falls in the hospital environment, 79 individuals (62.2%) reported that they were not provided with guidance regarding fall prevention, nine individuals (7%) fell during hospital stay. There was a significant association between self-reported risk of falling and dizziness when getting up from bed ($p=0.026$). The elderly individuals who participated in this study do not consider the hospital environment as a place where falls are likely to occur. The action of a multidisciplinary team, with different strategies and approaches, is essential to raise awareness among the elderly about the risk of falling in the hospital environment and to foster shared participation in their safety.

DESCRIPTORS: Patient safety; Aged; Accidental falls; Geriatric nursing.

SEGURANÇA DO PACIENTE IDOSO E O EVENTO QUEDA NO AMBIENTE HOSPITALAR

RESUMO: Trata-se de estudo quantitativo transversal, cujo objetivo foi investigar a segurança do paciente, autorrelatada pelos idosos, referente ao evento queda intra-hospitalar. O estudo foi realizado com 127 idosos em um hospital de ensino em Curitiba-PR, entre abril e julho de 2013. Utilizou-se entrevista semiestruturada, análises descritivas e teste exato de Fischer. Os resultados apontaram que 69 (55,2%) autorrelataram não existir risco de queda intra-hospitalar, 79 (62,2%) referiram não ter recebido orientações para prevenção de quedas, nove (7%) caíram durante a internação. Houve associação significativa entre o autorrelato de risco de queda e tontura ao levantar do leito ($p=0,026$). Os idosos deste estudo não reconhecem o ambiente intra-hospitalar como local propício ao risco de quedas. É essencial a atuação da equipe multidisciplinar com estratégias e abordagens diferenciadas, a fim de conscientizar os idosos sobre o risco de queda intra-hospitalar e estimular a coparticipação de sua segurança.

DESCRIPTORES: Segurança do Paciente; Idoso; Acidentes por Quedas; Enfermagem Geriátrica.

SEGURIDAD DEL PACIENTE ANCIANO Y EL EVENTO CAÍDA EN EL ÁMBITO HOSPITALARIO

RESUMEN: Estudio cuantitativo transversal, cuyo objetivo fue investigar la seguridad del paciente, relatado por los propios ancianos, en referencia al evento caída intrahospitalaria. Realizado con 127 ancianos en hospital de enseñanza de Curitiba-PR, de abril a julio de 2013. Se utilizó entrevista semiestructurada, análisis descriptivos y test exacto de Fischer. Los resultados expresaron que 69 (55,2%) ancianos refirieron inexistencia de riesgo de caída intrahospitalaria, 79 (62,2%) mencionaron no haber recibido orientación de prevención de caídas, y 9 (7%) cayó durante su internación. Existió asociación significativa entre el relato de riesgo de caída y mareo al levantarse de la cama ($p=0,026$). Los ancianos participantes no reconocen al ambiente intrahospitalario como lugar facilitador del riesgo de caída. Es esencial la actuación del equipo multidisciplinario con estrategias y abordajes diferenciados, a efectos de concientizar a los ancianos sobre el riesgo de caída intrahospitalaria y estimular la coparticipación de su seguridad.

DESCRIPTORES: Seguridad del Paciente; Anciano; Accidentes por Caídas; Enfermería Geriátrica.

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● INTRODUCTION

After the implementation of the National Patient Safety Program (NPSP), by means of Resolution MS/GM number 529 from April 1st 2013, from the Ministry of Health, the safety patient issue has provoked extensive discussions in order to contribute to the improvement of care and to promote greater safety to patients cared for in health units⁽¹⁾. According to the International Classification for Patient Safety (ICPS) of the World Health Organization (WHO), patient safety is “the reduction of risk of unnecessary harm associated with health care to an acceptable minimum”^(2:14).

The strategy currently employed to achieve the objective of providing patients with greater safety is to raise awareness among health professionals and managers about their responsibility regarding safety in care processes, so as to create a culture of safety. In addition, the Ministry of Health⁽³⁾ protocol for fall prevention establishes six patient safety goals: 1) To identify patients; 2) To improve communication between health professionals; 3) To improve safety in prescription, use and administration of drugs; 4) To ensure surgery in the adequate place of intervention, procedure and patient; 5) To sanitize hands in order to avoid infections; and 6) To prevent falls and pressure ulcers.

Regarding the sixth goal, it is noteworthy that hospitalization is pointed as one of the factors that increase the risk of falling⁽³⁾. This risk is higher among elderly people, due to the unknown environment, the presence of several systemic diseases, the submission to therapeutic procedures, the use of several drugs, in addition to the vulnerability resulting from the morbidity which led to hospitalization⁽⁴⁻⁵⁾.

The growth of the elderly population results in a greater demand for hospital institutions, which already have weaknesses in the infrastructure, in the access to physical spaces and specific elderly care programs. Furthermore, there is the challenge faced by professional teams who are short on staff and who are not qualified to care for elderly patients⁽⁶⁾.

The inadequacy of hospital institutions in caring for elderly patients compromises safety and puts them at inherent risks in the care process. Hence, they require greater attention from the health staff, due to their vulnerability to risks resulting from hospitalization, especially to the risk of falling.

Fall is considered a “geriatric syndrome” due to its very high incidence among elderly people. Compared to younger individuals, elderly people have a lower ability to recover, they require a longer stay at the hospital and have a higher mortality rate⁽⁷⁾. These are matters of concern to nurses regarding the care plan for elderly patients and they indicate the need to carry out effective actions to prevent falls. These actions could minimize the social, personal and economic costs resulting from a lengthy hospital stay⁽⁷⁾.

According to the literature, falls are categorized in intrinsic, extrinsic and behavioral factors, and preventing measures need to encompass each one equally⁽⁸⁾. The ICPS technical report divides the contributing factors to falls into those related to the team, to the patient, to external work/environment, to organization/service and others⁽²⁾.

The Brazilian Society of Geriatrics and Gerontology emphasizes the behavioral factor related to the level of exposure to risk: “apparently, inactive people and those who are more active have a greater risk of falling, possibly because of the fragility of the former, and of the level of exposure of the latter”^(8:6).

Considering that the event of a fall can bring several consequences to patients and hamper their safety, this study investigated patient safety and falls in the hospital environment, as reported by elderly patients. Identifying patients’ knowledge of their safety during hospitalization by means of self-reporting is extremely important, since it allows for deepening the understanding of this issue. This understanding can contribute to the implementation of effective measures of fall prevention, which in turn can prevent the functional decline of elderly people resulting from this complication.

● METHOD

This is a cross-sectional and quantitative study carried out in a large teaching hospital of Curitiba, Paraná, Brazil. Elderly patients hospitalized in male, female and surgical clinics participated in the study.

The individuals were selected by means of pre-established criteria. The inclusion criteria were: to be aged 60 years old or over; to be hospitalized in one of the clinics chosen for investigation; and to have cognitive capacity, assessed by means of cut-off scores⁽⁹⁾ at the Mini-Mental State Examination (MMSE)⁽¹⁰⁾. The exclusion criteria were: to have significant communication difficulties and to be readmitted in the mentioned units during the investigation period.

Data collection took place during the sampling period of April to July 2013, in which 228 elderly patients were hospitalized. Of these, 40 remained hospitalized for only 24 hours and there was not enough time to conduct an interview. A total of 188 individuals were interviewed, of which 9 did not meet the inclusion criteria, 10 did not reach the MMSE cut-off score, 18 reported that they were not in good physical conditions to carry out the interview and 24 were readmitted. The final sample was made up of 127 elderly people.

Data were collected by means of semi-structured interviews, which contained questions related to the identification of individuals, to the event of falls and to hospitalization over the last 12 months and at that point, its consequences, self-report on the risk of falls in the hospital environment, being provided with guidance and understanding of these guidelines. Microsoft Office Excel 2007 was used to encode and organize data, which were entered and submitted to a double check, in order to ensure the reliability of results. Statistical analysis was performed by means of the Statistical Package for the Social Sciences (SPSS) version 20.0, and data were processed by means of descriptive statistics and Fischer's exact test.

The research proposed was submitted to the Human Research Ethics Committee of the hospital in question, and obtained a favorable opinion under number 231500. The ethical precepts of individuals' voluntary and consented participation were respected, according to the regulations in place at the time of the study.

● RESULTS

Of self-reports made by the 127 individuals, 44 (34.6%) stated that they had fallen over the last 12 months. Of these falls, 37 (84.1%) were from the same height and seven (15.9%) were from another height. Loss of balance was mentioned by 16 individuals (12.5%) as the main cause of falls, followed by stumbling (objects, rugs, sidewalks) reported by 14 individuals (11%); eight of them (6.2%) passed out (sudden malaise, fainting, hypoglycemia) and six (4.7%) mentioned other reasons (horseback accident or carelessness). With regard to hospitalization over the last year, it was seen that 54 (42.4%) were hospitalized, apart from the current moment. During hospitalization, when this study was carried out, nine of them (7%) fell.

Regarding the clinical profile of the hospitalized individuals, 104 of them (81.9%) took drugs of continuous prescription. Sensory losses were reported by 94 of them (74%), such as visual impairment by 90 individuals (70.8%), followed by hearing impairment by 29 (22.8%), touching impairment by five (3.9%) and ageusia and swallowing difficulties by other three (2.3%). Regarding the use of assistive technology, 111 individuals (87.4%) reported the use of some supporting technology for their activities of daily living. The use of glasses and dental prosthesis (upper, lower or both) was reported by 84 of them (66.1%). As an aid equipment for locomotion, 22 individuals (17.2%) reported the use of some assistive technology, such as walking sticks, wheelchairs or walkers.

The age of the nine individuals who fell ranged between 62 and 76 years, with a mean of 66.9 years, with the majority being women (n=5) and four men. With regard to education, there was a variation between illiterate individuals (n=2) and elderly people with higher education (n=2), and most of them had completed elementary education (n=5). The admission department which recorded the highest number of falls was the General Surgery Clinic (n=4), followed by the Female Medical Clinic (n=3) and the Male Medical Clinic (n=2).

Table 1 shows that 58 individuals (45.8%) considered that the risk of falling in the hospital existed, whereas 69 of them (55.2%) stated that there was no such risk. Dizziness and loss of balance when getting up from bed were pointed as a risk of falling by 48 individuals (37.8%). As for guidance to prevent falls, 79 individuals (62.2%) reported they did not receive any information, and only 40 of them (31.3%) could recall at least one of the guidelines provided by the nursing staff.

Table 1 - Patient safety regarding the risk and prevention of falls in the hospital environment. Curitiba, PR, Brazil, 2013

PATIENT SAFETY VARIABLES	Yes		No		Total
	n	%	n	%	
Self-report of risk of falling					
Dizziness/loss of balance when getting up from bed	48	37.8	79	62.2	127
Think that there is a risk of falling in the hospital	58	45.8	69	55.2	127
Guidelines to prevent falls					
Were provided with guidelines to prevent falls	48	37.8	79	62.2	127
Were provided with oral information only	28	22.1	99	77.9	127
Were provided with oral and written information	20	15.7	107	84.2	127
Understanding of guidelines to prevent falls					
Recalled at least one guideline	40	31.3	87	68.5	127
Wore antislip footwear	109	85.8	18	14.2	127

Among those who reported that they were provided with information about fall prevention (n=48), 14 individuals (35%) remembered that one of the precautions was the use of antislip footwear, 12 individuals (30%) mentioned sitting at the bedside before getting up, 11 (27.5%) highlighted taking care when using the bathroom and the use of grab bars, 10 (25%) mentioned ringing the bell when necessary and nine (22.5%) pointed out other guidelines (Chart 1).

Chart 2 shows that out of the 58 individuals (45.8%) who reported the risk of falls in hospital environments, 18 (31%) mentioned the bathroom as the place or situation of higher risk, 12 (20.6%) reported that falls may occur for different reasons and nine (15.5%) pointed out the wet floor.

As seen in Table 2, there was a statistical association between self-reports of dizziness when getting up from bed and self-reports of risk of falling in the hospital ($p=0.026$). Of the 48 individuals who reported dizziness when getting up from bed, 28 (58.3%) mentioned that there is a risk of falling in the hospital. By contrast, among the 79 patients who did not feel dizzy when getting up from bed, 49 (62.0%) did not report the risk of falling. In addition, of the 48 patients who were provided with information for fall prevention in the hospital, 23 (47.9%) did not consider the hospital environment as a place where falls are likely to occur.

The place where patients most suffered from falls was the bedroom; 4 of them (44.4%) when going to the bathroom, three (33.3%) when getting up from bed, and one (11.1%) fainted in the bathroom and another in the examination room. Despite of the nine falls occurred during the study, six of them did not have consequences for the patients. Table 3 shows that one of the study participants died as a consequence of complications secondary to the fall.

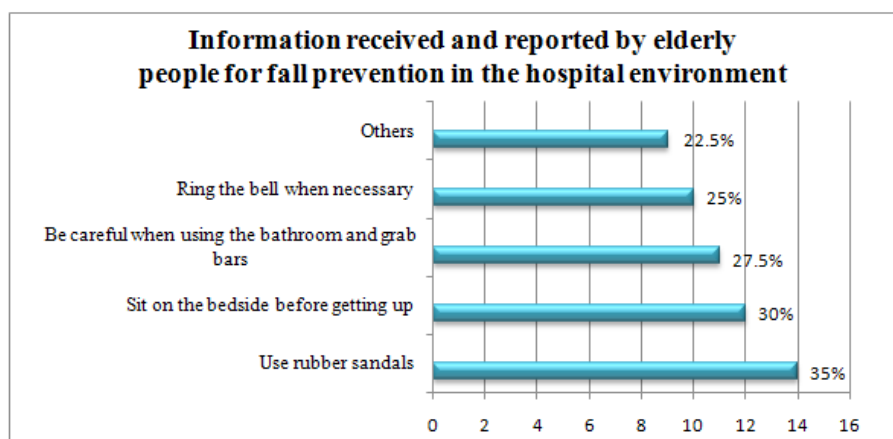


Chart 1 - Information received and reported by elderly people for fall prevention in the hospital environment. Curitiba, PR, Brazil, 2013

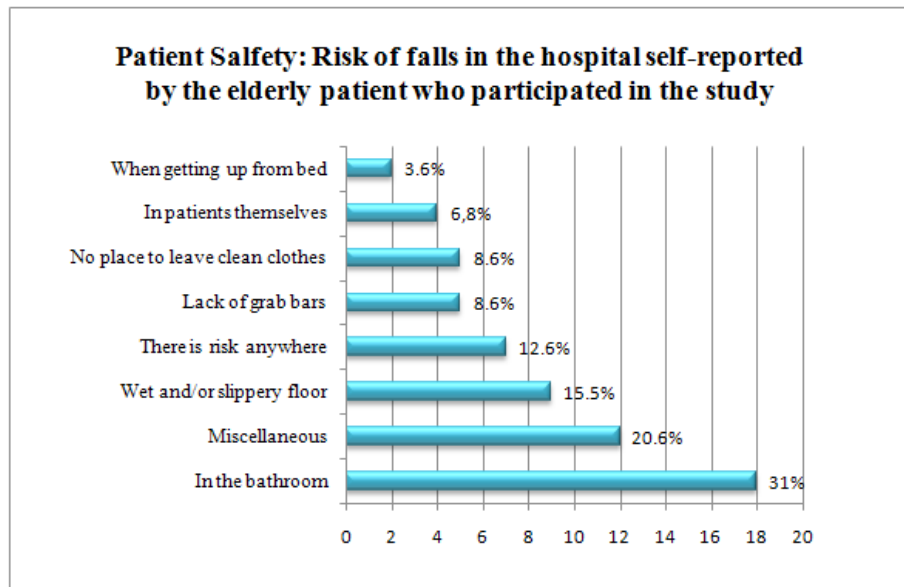


Chart 2 - Patient safety: risk of falls in the hospital self-reported by the elderly patients who participated in the study. Curitiba, PR, Brazil, 2013

Table 2 - Association between self-reports on the risks of falling in the hospital and the patient safety variables. Curitiba, PR, Brazil, 2013

PATIENT SAFETY VARIABLES	Answer	Self-report on the risk of falling in the hospital				General Total		p* value
		No		Yes				
		n	%	n	%	n	%	
Dizziness when getting up from bed	No	49	62.0	30	38.0	79	100	0.026
	Yes	20	41.7	28	58.3	48	100	
	Total	69	54.3	58	45.7	127	100	
Were provided with guidelines to prevent falls	No	46	58.2	33	41.8	79	100	0.353
	Yes	23	47.9	25	52.1	48	100	
	Total	69	54.3	58	45.7	127	100	

* Fischer's exact test

Table 3 - Event, place and consequences of falls in the hospital as self-reported by the elderly patients who participated in the study. Curitiba, PR, Brazil, 2013

VARIABLES	Yes		Total
	n	%	
Event of fall			
Fell during hospitalization	9	7	127
Place of fall as reported by the elderly patients and their consequences			
In the bedroom, on the way to the bathroom	4	44.4	9
When getting up from bed (dizziness/loss of balance)	3	33.3	9
Fainted in the bathroom	1	11.1	9
Fainted in the examination room	1	11.1	9
No consequences	6	4.7	9
Moderate and severe consequences	2	1.5	9
Death after fall	1	0.78	9

● DISCUSSION

Among the interviewed individuals, a significant percentage (34.6%) had fallen over the last 12 months prior to data collection. This figure is higher than that presented by a study carried out in Florianópolis (Santa Catarina), which investigated the circumstances and consequences of falls and the factors associated with limitations to perform certain activities after the fall, for which 19% of participants reported an event of fall in the last 12 months before the study⁽¹¹⁾. Most elderly people who have fallen developed the fear of falling again. This feeling makes them reduce the practice of physical exercises, affects their functional mobility, and this contributes to the loss of balance and increases the risk of a new fall⁽¹²⁾.

The results show that 7% of hospitalized elderly patients suffered a fall during hospitalization, of which 55.55% correspond to women. The higher incidence in women is associated with a greater physical fragility when compared to men, which can be the result of a higher rate of physiological loss of muscle mass among that population⁽¹³⁾. A study carried out in the city of Santo Estevão, Bahia, assessed 127 elderly patients hospitalized as a result of falls and described their causes and consequences. Results pointed that 65.4% of these patients were women⁽¹⁴⁾.

Readmission in the last 12 months also had significant results, with 42.5% (n=54) of elderly participants. Another study pointed out that elderly people have a functional loss when they are hospitalized as a result of an acute disease and that restriction to bed brings about an important loss of bone and muscle mass and can lead to a loss of walking ability, in addition to the increase in the risk of falling and fracturing a bone^(13:238).

Regarding education, 55.55% of the elderly people completed elementary education only. This is confirmed by a study carried out in a private hospital of Belo Horizonte, Minas Gerais, which assessed the incidence of falls in 96 elderly patients. This study showed that 13 individuals fell, of whom 61.53% had between 1 and 7 years of schooling⁽¹⁴⁾.

A low educational level interferes in the individual's perception of space, which leads them to report that they are safe even in environments that pose risks, such as the hospital. This educational gap interferes in elderly people's capacity to understand and commit to their health care, since they do not assimilate and apply the guidelines provided by multiprofessional teams for fall prevention⁽¹⁵⁾.

A study carried out with 221 elderly patients in three hospitals in Cuiabá, Mato Grosso, pointed as predictive factors for falls low education level, multidrug use, visual impairment, walking impairment, loss of balance, urinary incontinence, and the use of laxatives and antipsychotics⁽¹⁶⁾. In our study, four of these predictive factors were observed: multidrug use n=104 (81.9%), visual impairment n=90 (70.8%), walking impairment and loss of balance n=30 (23.4%) and low education level n=69 (54.3%). Multidrug use is pointed as the factor that may result in falls due to side effects and drug interactions⁽¹⁶⁻¹⁷⁾.

Guidelines for fall prevention in the hospital environment did not include all elderly patients, considering that, in this study, 79 of them (62.2%) reported that they were not provided with information. Furthermore, 69 participants (54.3%) believed that there is no risk of falling in the hospital environment. This shows that guidelines for fall prevention have not achieved the expected results and preventive measures might be overlooked. Similar results were obtained in a study carried out in 100 municipalities, including 23 Brazilian states⁽¹⁸⁾, which found that 2,361 of the elderly individuals studied (36%) had been provided with information about environmental precautions in order to avoid falls; however, the incidence of falls was 27.6%.

The elderly patients mentioned some factors that contribute to this event; 31% of them mentioned the bathroom as the place of greater risk, 15.5% cited wet floors and 8.6% the absence of a grab bar. These data are similar to those found by the nursing staff of a study conducted in Santa Casa Hospital of Belo Horizonte⁽¹⁹⁾, in which the most mentioned factors were: wet bathrooms, absence of grab bars in the bedrooms, slippery or polished floors, bathrooms and hallways.

Our study showed that patients fall when they perform an activity that may be considered as simple, such as getting up from bed (33.3%) and walking to the bathroom (44.4%). These falls could have been avoided if patients were helped, either by the multiprofessional team or an accompanying person.

Individuals aged over 60 often do not consider themselves as elderly people and might not realize they are vulnerable to the risk of falling⁽¹¹⁾.

A study conducted in a long-stay institution for the elderly, located in the state of Rio Grande do Sul, analyzed the influence of functionality/cognition changes and depression on elderly patients who fell. The results showed that 11 elderly individuals (55%) who fell were independent for activities of daily living, but they can fall when they are not provided with help in some activities⁽²⁰⁾.

A total of 22 elderly individuals (50%) who fell over the last 12 months prior to admission had moderate or severe consequences. Despite the nine falls that occurred within the hospital environment during the study, six did not bring complications to the individuals and three had moderate or severe consequences, of which one resulted in death due to fracture complications.

A study⁽¹⁴⁾ conducted in the Hospital Doutor João Borges de Cerqueira, Bahia, with 127 individuals who fell, pointed some consequences such as pain, abrasions, edemas, wounds, bruises, fractures, traumas and traumatic brain injuries, for which pain was the main consequence observed.

Studies have shown that femoral fractures correspond to the main cause of emergency admissions, as the result of fall of elderly individuals, and 30% of them result in death⁽²¹⁾. Furthermore, there is an increase in hospital stay of 12.3 days beyond what is expected, and a 61% increase in general treatment costs⁽²²⁾.

● CONCLUSIONS

There was a statistical association between self-reports of dizziness when getting up from bed and self-reports of risk of falling in the hospital ($p=0.026$). A significant part of individuals experienced a fall over the 12 months preceding this study and fell during the hospital stay. Most individuals did not mention any risk factor for falls in the hospital environment, and they considered it a safe place. In addition, the majority reported that they were not provided with information about fall prevention.

Elderly individuals do not consider the hospital environment as a place where falls are likely to occur, and consequently, preventive measures are possibly being overlooked. In view of the above, different strategies and approaches developed by a multidisciplinary team are essential. This team aims to raise awareness among elderly patients regarding the risk of falling in the hospital and to encourage them to participate actively in their own safety, by requesting help from the multidisciplinary team or from an accompanying person in simple tasks such as getting up from bed, going to the bathroom or walking through hallways, in order to perform their basic activities of daily living safely.

Active participation of all related sectors that provide direct or indirect care to patients, including managers, is essential, so that everyone can understand the risks of falling in a hospital environment and, consequently, improve the safety of hospitalized elderly patients.

Some limitations were found during the study, such as the number of patients admitted in the General Surgery Clinic, and who remained there for only 24 hours; low availability of bibliographic references related to the specific topic of hospital environment; and the different clinical profiles of participants.

● REFERENCES

1. Ministério da Saúde (BR). Fundação Oswaldo Cruz (FIOCRUZ), Agência Nacional de Vigilância Sanitária (ANVISA). Documento de referência para o Programa Nacional de Segurança do Paciente. 2014 [acesso em 9 dez 2015]. Disponível: http://bvsms.saude.gov.br/bvs/publicacoes/documento_referencia_programa_nacional_seguranca.pdf
2. World Health Organization (WHO), Direção Geral de Saúde (DGS), Ministério da Saúde (PT). Estrutura conceitual da classificação internacional sobre segurança do doente. 2011. [acesso em 05 mai 2015]. Disponível: http://apps.who.int/iris/bitstream/10665/70882/4/WHO_IER_PSP_2010.2_por.pdf

3. Ministério da Saúde (BR). Agência Nacional de Vigilância Sanitária (ANVISA), Fundação Oswaldo Cruz (FIOCRUZ). Anexo 01: Protocolo de prevenção de quedas. 2014. [acesso em 09 dez 2015]. Disponível: http://www.saude.pr.gov.br/arquivos/File/0SEGURANCA_DO_PACIENTE/protocolo_prevencao_quedas.pdf
4. deCastro IRS, Mendes RMAC, Guimarães MN, de Carvalho LS, dos Santos EH, Fontes BV, et al. Perfil de quedas no ambiente hospitalar: a importância das notificações do evento. Rev. Eletrônica de Acreditação. [Internet] 2011; 01(2) [acesso em 05 dez 2015]. Disponível: <http://cbacred.tempsite.ws/ojs/index.php/Acred01/article/view/57>
5. de Almeida RAR, de Abreu CCF, Mendes AMOC. Quedas em doentes hospitalizados: contributos para uma prática baseada na prevenção. Revista de Enfermagem Referência. [Internet] 2010; 3(2) [acesso em 11 dez 2015]. Disponível: <http://www.scielo.mec.pt/pdf/ref/vserIIIn2/serIIIn2a17.pdf>
6. Leite, MT; Gonçalves, LHT. A enfermagem construindo significados a partir de sua interação social com idosos hospitalizados. Texto contexto-enferm. Florianópolis. [Internet] 2009; 18(1) [acesso em 17 nov 2015]. Disponível: <http://dx.doi.org/10.1590/S0104-07072009000100013>
7. Lima RS, Campos MLP. Perfil do idoso vítima de trauma atendido em uma unidade de urgência e emergência. Rev. Esc. Enferm. USP. [Internet] 2011; 45(3) [acesso em 06 dez 2015]. Disponível: <http://dx.doi.org/10.1590/S0080-62342011000300016>
8. Sociedade Brasileira da Geriatria e Gerontologia, Buksman S, Vilela ALS, Pereira SRM, Lino VS, Santos VH, participantes. Quedas em idosos: Prevenção. 2008. [acesso em 10 dez 2015]. Disponível: http://www.projetodiretrizes.org.br/projeto_diretrizes/082.pdf
9. Bertolucci PHF, Brucki SMD, Campacci SR, Juliano Y. O mini exame do estado mental em uma população geral. Impacto da escolaridade. Arq. Neuro-psiquiatr. [Internet] 1994;52(1) [acesso em 06 dez 2015]. Disponível: dx.doi.org/10.1590/S0004-282X1994000100001
10. Folstein MF, Folstein SE, McHugh PR. "Mini-mental state": a practical method for grading the cognitive state of patients for the clinician. J Psychiatr Res. [Internet] 1975; 12(3) [acesso em 11 dez 2015]. Disponível: [http://www.journalofpsychiatricresearch.com/article/0022-3956\(75\)90026-6/pdf](http://www.journalofpsychiatricresearch.com/article/0022-3956(75)90026-6/pdf)
11. Antes DL, d'Orsi E, Benedetti TRB. Circunstâncias e consequências das quedas em idosos de Florianópolis. EpiFloripa Idoso 2009. Rev. bras. epidemiol. [Internet] 2013; 16(2) [acesso em 08 jan 2016]. Disponível: <http://dx.doi.org/10.1590/S1415-790X2013000200021>
12. de Freitas MG, Bonolo PF, de Moraes ED, Machado CJ. Idosos atendidos em serviço de urgência no Brasil: um estudo para vítimas de quedas e de acidentes de trânsito. Ciênc. saúde colet. [Internet] 2015; 20(3) [acesso em 02 fev 2016]. Disponível: <http://dx.doi.org/10.1590/1413-81232015203.19582014>
13. Alexandre, TS, Corona LP, Nunes DP, Santos JLF, Duarte YAO, Lebrão ML. Disability in instrumental activities of daily living among older adults: gender differences. Rev Saúde Pública. [Internet] 2014; 48(3) [acesso em 03 dez 2015]. Disponível: <http://dx.doi.org/10.1590/S0034-8910.2014048004754>
14. Peixoto MP, Artelosa RCC, Silva LAT, Santos TSM. Causas e consequências de quedas em idosos atendidos no hospital de Santo Estevão, BA. Revista Biociências. [Internet] 2015; 21 (2) [acesso em 11 dez 2015]. Disponível: <http://periodicos.unitau.br/ojs-2.2/index.php/biociencias/article/viewFile/1883/1537>
15. de Oliveira, DU. Avaliação de quedas em idosos hospitalizados. [dissertação]. Belo Horizonte (MG): Universidade Federal de Minas Gerais; 2014. Disponível: <http://www.enf.ufmg.br/pos/defesas/830M.PDF/>
16. Abreu HCA, Reiners AAO, Azevedo RCS, da Silva AMC, Abreu DROM, de Oliveira AD. Incidência e fatores preditores de quedas de idosos hospitalizados. Rev. Saúde Pública. [Internet] 2015; 49(37) [acesso em 10 dez 2015]. Disponível: <http://dx.doi.org/10.1590/S0034-8910.2015049005549>
17. Costa-Dias MJM, Oliveira AS, Moreira CN, Santos AS, Martins T, Araújo F. Quedas dos doentes internados em serviços hospitalares, associação com os grupos terapêuticos. Rev. Enf. Ref. [Internet] 2013; serIII(9) [acesso em 11 dez 2015]. Disponível: <http://dx.doi.org/10.12707/RIII12142>
18. Siqueira FV, Facchini LA, da Silveira DS, Piccini RX, Tomasi E, Thumé E, et al. Prevalence of falls in elderly in Brazil: a countrywide analysis. Cad. Saúde Pública [Internet]. 2011; 27(9) [acesso em 10 dez 2015]. Disponível: <http://dx.doi.org/10.1590/S0102-311X2011000900015>

19. Viana JU, de Oliveira MC, Magalhães TV. Quedas intra-hospitalares na Santa Casa de Belo Horizonte MG são adequadamente relatadas? Fisioter. Pesqui. [Internet]. 2011; 18(1) [acesso em 17 out 2015]. Disponível: <http://dx.doi.org/10.1590/S1809-29502011000100013>
20. Valcarenghi RV, Santos SSC, Barlem ELD, Pelzer MT, Gomes GC, Lange C. Alterações na funcionalidade/ cognição e depressão em idosos institucionalizados que sofreram quedas. Acta paul. enferm. [Internet] 2011; 6(24) [acesso em 21 out 2015]. Disponível: <http://dx.doi.org/10.1590/S0103-21002011000600017>
21. Gawryszewski VP. A importância das quedas no mesmo nível entre idosos no Estado de São Paulo. Rev Assoc Med Bras. [Internet] 2010; 56(2) [acesso em 07 nov 2015]. Disponível: http://www.observatorionacionaldoidoso.fiocruz.br/biblioteca/_artigos/191.pdf
22. Kulik C. Components of a comprehensive fall-risk assessment. IN: Special Supplement to American Nurse Today – Best Practices for falls Reduction: A Practical Guide. [Internet] 2011; 6(3) [acesso em 16 dez 2015]. Disponível: <http://www.americannursetoday.com/assets/0/434/436/440/7364/7542/7544/7634/4e4e7c0a-fddc-498a-9e6b-2f8>