Falls in hospitalized elderly: an integrative review

Quedas em pessoas idosas hospitalizadas: uma revisão integrativa

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ABSTRACT

This research aims to analyze the scientific evidence about the falls occurrence in elderly people in the hospital environment. This is an integrative revision study based on the publications related to the fall in hospitalized elderly; the survey was conducted through the databases: MEDLINE, LILACS and BDENF (viaVHL). The inclusion criteria were: article available in Portuguese, English and Spanish, in full and online, published in the period from 2011 to 2015. Exclusion criteria were: repeated articles on different bases and systematic reviews. After publications analysis, the inclusion criteria established, 07 studies met the requirements. In general, the risk factors are directly linked to cases of falls occurrence, among the several risk factors for the fall occurrence in the hospitalized elderly; highlight visual acuity, physical mobility, cognitive alterations and urinary incontinence. It concluded that is of excellent value to develop strategies aimed to implementing assistance and improving the safety and life quality of hospitalized elderly people with potential risk for falls.

Keywords: Elderly; Accidents by Falls; Hospitalization.

RESUMO

Objetiva-seanalisar evidências científicas acerca da ocorrência de quedas em pessoas idosas no ambiente hospitalar. Trata-se de estudo de revisão integrativaacerca das publicações relacionadas à queda em idosos hospitalizados, o levantamento foi realizado nas bases de dados: MEDLINE, LILACS e BDENF (via BVS). Os critérios de inclusão foram:artigo disponível em português, inglês e espanhol, na íntegra e *online*, publicados no período de 2011 a 2015. Os critérios de exclusão foram:artigos repetidos em diferentes bases e revisões sistemáticas. Após análise das publicações, respeitados os critérios de inclusão instituídos, 07 estudos atenderam às exigências. Em geral, os fatores de risco estão diretamente ligados aos casos de ocorrência de quedas na população idosa hospitalizada, dentre eles, destacam-se: acuidade visual, mobilidade física, alterações cognitivas e incontinência urinária. Conclui-se que é de grande valia a elaboração de estratégias que visem à implementação de uma assistência voltada para a melhoria da segurança e qualidade de vida das pessoas idosas hospitalizados com potencial risco para quedas.

Palavras-chave: Idoso; Acidentes por Quedas; Hospitalização.

NOTE

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INTRODUCTION

The Brazilian population is approximately 190 million, of which 10% are people over 60, estimates predict that by 2050 this percentage will increase to 30%[1]. The World Health Organization (WHO), points out that anyone from 60 years-old is considered elderly in developing countries. Remembering that this evaluation is done physiologically, not preventing the person from having a social life and adequate conditions for a healthy and active life[2].

It is evidenced that, concomitant with the increase in the elderly people number and the increase in life expectancy, there is an enhancement in the health problems' incidence in this population. Consequently, the elderly have more hospitalizations, especially in acute cases of[3].

Hospital admission may cause a decrease in the elderly person functional capacity, due to the external influence, environmental, physical and cultural factors that interfere in the functional independence of the same person. Proceeding with the health-disease process, hospitalization can enhance physical fragility and emotional vulnerability[3]. Physical frailty and hospitalizations can cause the falls risk and, when happens, deserves the health team attention, since it is one of the occurrences and complications that further weakens the elderly.

Falls are commonly defined as "coming in inadvertently, staying on the ground or at a lower level, excluding intentional changes of position to lean on furniture, walls or other objects"[2].

The fall definition is an important requirement in studies, since many fail to specify an operational definition, thus opening space for the participants' interpretation, which leads to many different interpretations of the fall concept. Older people, for example, tend to define falling as a loss of balance, while health professionals in general refer to events that lead to injury and damage to health[2].

The falls' occurrence, most of the time, is caused by the sum of several risk factors and multiple causes, making it difficult to analyze a factor as the cause of the episode. However, falls resulted from a cause extrinsic to the individual are mostly accidental, being unique and difficult to repeat, as seen in hospital falls. Recurrent falls are derived from individuals' own factors, such as: physiological changes due to aging, pathologies and drug use[4]. Thus, falls in the elderly at the hospitalization time occur by a sum of physiological and pathological alterations of aging and by accidents in the environment.

The hospitalization process tends to reinforce the elderly person's negative feelings and encourages him to adopt a passive and regressive attitude, which cannot be intentionally accentuated if the professionals reinforce the incompetence idea, limiting actions that the elderly person can perform alone[5]. The falls frequency in the elderly person's family environment is worrying, but much more so when they occur in a hospital environment, since the hospitalized elderly person is already debilitated by the illness and hospitalization, and the fall event adds to the fragility and , consequently, health problems in addition to those already existing[5].

It is also worth noting that falls in hospital are more frequent among elderly people of more complex units, and among those who use drugs with central nervous system (CNS) action or with gait difficulties[6]. A study[7] points out that the most frequent injuries types were: falls of the same height with 211 hospitalizations (52.50%), other types of falls with 82 (20.40%) and traffic accidents with 58 (14.40%) hospitalized elderly. It is noteworthy that, in association, the falls types reached 72.9%, totaling 293 hospitalizations of the elderly.

Currently, there is a growing concern about the falls' occurrence, since prevention of them is within the goals of the National Patient Safety Program (NPSP) established in 2013. Patient safety has been on the agenda at the professionals and the staff of management meetings in health services[8].

Based on the fall prevention protocol of the National Health Surveillance Agency (NHSA), health units, guided by its Patient Safety Center (PSC), should adopt general measures to prevent falls of all patients regardless of risk[9].

Given the above, the following research question was elaborated: What are the evidences found in the scientific literature on the falls' occurrence in hospitalized elderly people? Therefore, this research aims to analyze the scientific evidence about the falls of the elderly in the hospital environment.

METHOD

This is an integrative review study about the publications related to the fall in hospitalized elderly in the period from 2011 to 2015. The Integrative Review is a strategy that allows the synthesis of information on a specific theme, through the rigorous data analysis from different researches methodologies[10].

For this purpose, the six steps indicated for the literature integrative review constitution were adopted: 1) selection of the research question; 2) studies inclusion criteria definition and sample selection; 3) representation of the selected studies in table format, considering all the characteristics in common; 4) critical analysis of the findings, identifying differences and conflicts; 5) interpretation of the results; and 6) to report, in a clear way, the evidence found[11].

Following the criteria mentioned above, first the research question was drawn: What are the evidences found in the scientific literature on the falls' occurrence in hospitalized elderly?

In the second step of the literature search, which was carried out in the Virtual Health Library (VHL), with the following databases: Medical Literature Analysis and Retrieval System Online (MEDLINE), Latin American and Caribbean Literature in

Health Sciences (LILACS) and the Nursing Database (BDENF). Were captured publications in thearticle form available in full and online, in Portuguese, English and Spanish, published in these databases from 2011 to 2015. Repeated articles on different bases and systematic reviews are excluded. The words used were the Medical Subject Headings (MeSH): "elderly", "accidents by falls" and "hospitalization", such search was performed with the associated descriptors through the Boolean operator "AND".

The third step consists of thecollection and organization of the data extracted from the selected studies. At this stage, the information was organized and summarized for better management. A|nd will be presented in the results of the present study.

The fourth step covers the critical analysis of the evidence from the selected studies. For this, the evidence levels hierarchy was used. Level I - evidence from a systematic review or meta-analysis of randomized controlled trials or from clinical guidelines based on systematic reviews of randomized controlled trials; level II - evidence derived from at least one randomized controlled trial; level III - evidence obtained from clinical trials without randomization; level IV - cohort and case-control studies; level V - systematic review of descriptive and qualitative studies; VI - evidence derived from a descriptive and/or qualitative study; level VII - authorities opinion or rexpert committees' report[11]. It should be noted that levels I and V were excluded from the study.

In the fifth step, the interpretation and discussion of the results obtained about falls in hospitalized elderly were performed. To conclude, the sixth step of the study consists of a review and synthesis of the evidence on the falls' occurrencein the elderly in the hospital environment.

The following flowchart presents the articles selection process:

RESULTS

As punctuated in Flowchart 1, the total number of articles that contemplated the elaborated question and the inclusion and exclusion criteria was of 07 articles. Four articles of qualitative approach were found, an
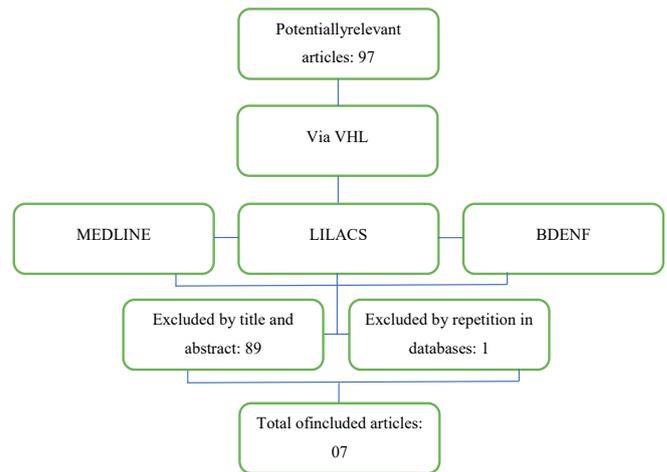
Flowchart 1. Survey articles. Niterói, RJ, Brazil, 2016.
Source: survey data.

observational study, an integrative review and a cohort study. All articles are available in the Medical Literature Analysis and Retrieval System Online (MEDLINE) database.

Regarding the publication year, six of the seven articles analyzed are presented as the year of publication 2015, and another study for 2012.

It is noted that approximately 43% of the analyzed articles worked on the question of risk factors for the occurrence of falls in elderly hospitalized patients.

In the study, a level VI predominance was observed - evidences derived from a descriptive and/or qualitative study, addressing the fall theme in institutionalized and hospitalized elderly.

Table 1 and Chart 1 below present the databases, journal name, publication year, author, evidence level, research objectives, study type and results.

DISCUSSION

The falls' occurrence has significantlyenhancement in recent years, due to the steady increase of the elderly population. They usually present more serious cases that require hospitalization and consume more resources than those of any other age group. Geriatric traumatology has

Table 1. Articles distribution according to the selected journals in the MEDLINE, LILIACS, BDENF database from 2011 to 2015. Niterói, RJ, Brazil, 2016.

DATABASE	JOURNAL	2011	2012	2013	2014	2015	TOTAL
MEDLINE	J Nutr Health Aging					X	
MEDLINE	BMJ Open					X	
MEDLINE	J GerontolNurs					X	
MEDLINE	RevSaude Publica					X	
MEDLINE	Health Expect					X	
MEDLINE	Arch GerontolGeriatr					X	
MEDLINE	RehabilNurs		X				
TOTAL		00	01	00	00	06	07

Source: survey data.

Chart 1. Studies selected by the Virtual Health Library (VHL). Niterói, RJ, Brazil, 2016.

AUTHOR/ YEAR	DATABASE/ LEVEL OF EVIDENCE	RESEARCH OBJECTIVE	STUDY TYPE	RESULT
Hoffmann VS, Neumann L, Golgert S, von Kenteln-Kruse W[10]. 2015	MEDLINE/VI	To validate prospectively, the performance of the LUCAS (Longitudinal Urban Cohort Study Aging) fall risk of screening, based on routine data (falling history, mobility, mental state) and applied by nurses.	Observational	The proportions of falls during the two periods were LUCAS n = 291 / 2,337 (12.5%) vs. stratify n = 508 / 4,735 (10.7%). After adjusting for the prevalence of risk factors, the proportion of expected falls was 14.5% (334 / 2,337), the observed proportion was 12.5% (291 / 2,337) (p = 0.038).
Hill AM, McPhail SM, Francis-Coad J, Waldron N, Etherton-Beer C, Flicker L, Ingram K, Haines TP[11]. 2015	MEDLINE/VI	Explore perspectives of delivering educators' education and conceptualizing how the program worked to prevent falls in elderly patients who received education.	Qualitativeexploratory	The education for prevention has led to mutual understanding between staff and patients that has helped patients to engage in prevention behaviors falls.
Zhao YL, Kim H[12]. 2015	MEDLINE/VI	To identify multidimensional risk factors for falls among older adult patients in acute care hospitals.	Literatureintegrative review	The incidence rate of falls-related injuries ranged from 6.8% to 72.1%. Old age was an important intrinsic risk factor, whereas being a patient in a geriatric unit was a significant extrinsic factor of in-hospital falls and falls-related injuries.
Abreu HCA, Reiners AAO, Azevedo RCS, Silva AMC, Abreu DROM, Oliveira AD[13]. 2015	MEDLINE/VI	To estimate the incidence factors and predictors associated with falls among older patients.	Cohortprospective	The falls incidence was 12.6 per 1,000 patients / day. Predictors of falls during hospitalization were: low schooling, polypharmacy, visual impairment, gait and balance, urinary incontinence, and use of laxatives and antipsychotics.
Haines TP, Lee DCA, O'Connell B McDermott F, Hoffmann T[14]. 2015	MEDLINE/VI	Understand why older adults take risks that can lead to falls in the hospital setting and in the transition period after discharge.	Qualitativedescriptive	The main factors that influenced the risk behavior taking were ability to risk compensation; willingness to ask for help; desire to test the physical limits; failure of communication between and within the elderly, informal caregivers and health professionals; and delayed delivery of aid.
Haines TP, Williams CM, Hill AM. McPhail SM, Hill KD, Hill D, Brauer SG, Hoffmann TC, Ethertib-Beer C[15]. 2015	MEDLINE/VI	Describe the magnitude of depressive symptoms, change in depressive symptoms and the impact of depression symptoms among older hospital patients during hospitalization and identify whether exposure to prevention education falls from symptoms of depression affected.	Qualitativedescriptive	Participants were the elderly hospitalized in two Australian hospitals, most participants completed the Geriatric Depression Scale (GDS) on admission (n = 1,168). The mean age of participants was 74.7 and 47% were males. At admission 53% of the participants had symptoms of clinical depression and the symptoms remained at the same level at the time of discharge of 55%. People exposed to the low-intensity education program had higher GDS scores at discharge than those in the control group.
Ferrari M, Harrison B, Lewis D[16]. 2012	MEDLINE/VI	Exploring the association between seven fall risk factors and falls related to impulsivity in older adults hospitalized in a community hospital.	Descriptive Retrospective	The sample (N = 233) included patients aged 65 years or over who had a documented fall in the patient in 2008. Of the falls, 29.7% were classified as FHR. The mean age of the patients with FHR of 78 years, with the median day being fall Day 5 of hospitalization/ rehabilitation admission. Logistic regression demonstrated that only inattention and cognitive dysfunction were significant risk factors for FHR.

Source: survey data.

assumed an increasingly significant role for the health sector. It is noted that among the several factors that contribute to the falls' occurrence, the rise in age and a negative self-perception of health are the factors that increase their frequency [19].

In one of the studies[11], it is observed that in the hospital setting, the falls' occurrence in people aged 60 years and over ranges from three to seven falls per 1,000 patients/day and is related to the patient's intrinsic factors, such as: advanced age, balance and gait, urinary incontinence, impaired cognitive status and others.

The extrinsic factors are represented by some conditions of the hospital environment and situations related to healthcare by the medical-hospital team, such as: use of hypnotic, anti-anxiety and antiparkinsonian drugs, among others[20]. It is necessary for the health team to identify these intrinsic and extrinsic factors early so that prevention goals can be traced and effective.

It is extremely important to highlight that accidents due to falls in hospitals also cause injury to the institutions themselves because they are associated with an increase in the length of hospital stay and greater use of health resources, which also impacts on the quality of care provided.

The fall in the hospital environment is reason for several discussions in the attempt to take effective measures to contain them, and to draw a patients profile who suffer this event[29]. However, the falls are still, as a challenge for the institutions, that need to assume pertinent attitudes in the investigation, formation and implementation of preventive measures[30].

A study[21] made a contribution to explaining that, among some countries in North America and Europe, it has been found that the stay length of the elderly in the hospital usually varies from four to fifteen days. Indeed, this is even more so in developing or underdeveloped countries whose health policies suffer from lack of financial support and effective strategies to make an appropriate treatment available.

In a research[22] about elderly falls in hospitals, investigated mainly the patients and falls characteristics, above all, the associated factors. It is also observed that a small amount of research determined the incidence and factors associated with the falls of hospitalized elderly people by cohort follow-up studies. This issue promotes an awakening of the need to develop more studies that can interweave pertinent issues theelderly falls in the hospital environment and the methodological design of a cohort study.

Most of the analyzed studies presented the questions of the risk factors, which predispose to the event of this elderly population falls. In some studies, factors related to the environment, team actions, training, patient and intrinsic risk factors were identified, such as: visual alteration, balance, mobility and also highlighted the assistance practice actions that contribute to the falls' occurrence in hospital wards[15].

Making a survey about the risk factors that the elderly present that can lead them to fall, it is necessary to elaborate a nursing process directed to the each patientspecificity, in order to meet each one within its conditions and individualities, tracing appropriate and effective interventions.

One characteristic that emerged in a study[15] was the educational level of the elderly with falls. It was observed that low schooling was associated with falls. One possible explanation is that poorly educated elderly people value healthcare poorly, as well as being less able to engage in health recovery, which increases the risk of falls. This set points to the fact that, for the health professional, his qualification as a health educator is very important in view of the need to detect this elderly person with a possible difficulty of understanding, and thus to develop strategies, educational technologies that can serve it and guide you in the correct way to care about the possible falls.

Urinary incontinence was also highlighted as the main factor associated with falls in hospitalized elderly people. Urinary incontinence and fall are classified as "Giants of Geriatrics", that are, important morbidities in triggering different pathological processes in the elderly[15]. It believed that urinary incontinence contributes to a higher risk of falls in the elderly because they need to get up more often to go to the bathroom.

The cognitive, depressive and neurological aspects can be considered as strong falls predictors, especially in the elderly, because they cause difficulties in the execution of daily activities, disorientation in space, changes in gait and postural stability[23]. Such risk factors may be present in an associated way in patients, and thus increase the individual's susceptibility to fall.

The elderly who use polypharmacy are at greater risk for the falls' occurrence[22]. There is a large association between drug use, especially polypharmacy, and the falls risk[25-26-27].

With regard to proposals to reduce and prevent falls, studies[15-23] showed that there is some evidence that patient education is a benefit when provided as part of multifactorial programs and as a single intervention. In addition to this, qualitative research conducted in a hospital environment found that knowledge and communication with patients regarding falls prevention are essential components of a comprehensive care plan to prevent falls[28].

Studies also point out that the nurses' performance is fundamental for the falls prevention and in actions that provide selfcare. Likewise, the creation of an elderly care model that focuses on identifying potential risks and directing resources from the health system to an early intervention results in better chances of rehabilitation and reduced impact on the elderly functionality[24].

In view of such factors, it is necessary to provide the patient with a safe environment for their daily activities performance. It is the task of the nurse and the nursing team to prioritize the accessibility of these people through the study of action proposals to prevent falls accidents[28].

The risk factors identification articulation of the elderly with a potential risk to fall and a care plan well traced by the nurse and executed by his team, together with the other professionals involved in the health recoveryof the hospitalized elderly person, causes that the falls events are eligible for reduction.

CONCLUSION

Falls can be considered a large-scale worldwide problem and serious for the elderly population. In addition to this fact, they present multifaceted repercussions in the life of an elderly person, which may include: high morbidity and mortality, with important functional deterioration, hospitalization and institutionalization. With the falls' occurrence, the elderly people restrict their activities due to pain, disability, fear of falling or by counseling of third parties as a protective measure.

It is pointed out as a limitation of the study, the few studies that worked on the theme in the years 2011, 2012, 2013 and 2014, considering that the studies analyzed focused on the publication year of 2015.

The low evidence level of the selected articles is also highlighted. It is important to emphasize that studies with higher levels of evidence, such as randomized clinical trials, seek to evaluate the effectiveness of some product, not having as main outcome the assessment of the fall risk.

It was observed that to work with falls in elderly people in the hospital environment, it is extremely important to have prior knowledge of the risk factors that each individual present, so that strategies to prevent the occurrence of such falls can be outlined and put into practice.

With the accomplishment of the research, it is observed the need of more studies that focus on the nursing interventions that can be performed in the hospital environment so that the falls' occurrence is avoided. It is emphasized that conducting research on the subject is fundamental for the elaboration of strategies that aimto the implementation of assistance basedin the improving the quality and safety of hospitalized elderly people.

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