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NURSING INTERVENTIONS FOR THE PREVENTION OF FALLS IN PATIENTS WITH STROKE

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ABSTRACT

Objective: to present the knowledge produced on nursing interventions for the prevention of falls in patients with stroke.

Methods: integrative review of the literature. The search of the works happened in five databases of the health area. We read the 500 papers and we select 63 for addressing the research topic.

Results: the interventions we grouped into three thematic categories: Interventions on Risk Assessment of falls, Interventions in the environment / home and direct care interventions to patients and their families.

Conclusion: the interventions found help nurses in identifying risk factors, in the recognition of patients at risk of falls and in the elaboration of a nursing care plan for the patient with stroke.

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INTRODUCTION

Stroke is the second cause of mortality in Brazil, becoming a serious public health problem (Global Burden of Disease Study, 2013). In addition to the epidemiological importance of stroke in the world and in Brazil, this pathology generates a wide variety of neurological deficits depending on the location of the lesion, the size of the area of inadequate perfusion and the amount of collateral blood flow (Lessman *et al.*, 2011). Dysfunctions such as anxiety, depression, sleep disorders and sexual function, motor, sensory, cognitive and communication disorders are prevalent changes in patients affected by stroke. This situation makes them dependent on nursing interventions.

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The Classification of Nursing Interventions defines a nursing intervention as a treatment, based on clinical judgment and knowledge, performed by nurses to improve the results obtained by the patient (Bulechek *et al.*, 2016). Nurses assist to the patient with stroke in the different clinical contexts of care (primary, secondary and tertiary), as well as in the different stages of stroke - acute, subacute and rehabilitation. Specifically, falls are a major problem in patients with stroke. The occurrence of falls is one of the health problems faced by the elderly population both institutionalized and at home (Costa *et al.*, 2010). Several factors are involved in this event, such as problems in physical mobility, functional, visual and cognitive capacity. These changes, in turn, are due to the physiological and unavoidable process of old age and are more pronounced when added to the complications resulting from non-transmissible chronic degenerative diseases, such as

stroke. Stroke thus constitutes an important pathology, capable of increasing the chances of occurrence of falls due to the relevant physical impairment that can cause. Most people who survive a stroke have hemiplegia and have a commitment to remain in a position of postural asymmetry, with a lower weight distribution on the paretic hemi body. This asymmetry and the difficulty of maintaining postural control impede orientation and stability to perform movements with the trunk and limbs and can cause falls (Costa *et al.*, 2010). Therefore, the occurrence of falls is an important health problem, especially as it reaches a prevalence of 37.3% to 45.5% in patients with stroke, which can lead to serious consequences such as fractures or even death. It is also worth noting the financial burden that they generated when an individual is affected by the event. In this context it is evident the importance of implementing prevention strategies (Oliveira *et al.*, 2011). There are papers published in the literature on the topic of falls in people with stroke. In which they report to the nursing diagnosis Risk of falls and to the nursing outcome Fall Prevention Behavior (Costa *et al.*, 2010; Costa *et al.*, 2013; Morais *et al.*, 2012; Oliveira *et al.*, 2011). However, studies that involve nursing interventions to prevent falls in this population are still incipient. The actions of the nursing team should be aimed at favoring recovery and adaptation to the limitations imposed by the sequelae of stroke and to the needs of each patient and family, among which the prevention of falls in hospital settings, outpatient or home (Morais *et al.*, 2012). This study is also justified by the need for follow-up of stroke patients by qualified nurses, who must have in-depth and up-to-date knowledge about nursing interventions that can minimize and / or prevent the risk of falls. Thus, the objective of this study is to present the knowledge produced on nursing interventions for the prevention of falls in patients with stroke.

MATERIALS AND METHODS

This method was integrative review of literature, since it brings together and synthesizes research results on a delimited topic, in a systematic and organized way, contributing to the deepening of the knowledge of the researched subject (Mendes *et al.*, 2008). In order to prepare the integrative review, we followed the following steps: identification of the research question, identification of the study objective, search for literature, evaluation and analysis of data and presentation of results (Whittemore and Knafl, 2005). We searched the topic of interest: nursing interventions for the prevention of falls in patients with stroke. Then, with a view to contemplating this theme, the objective of the integrative literature review was determined: to present the knowledge produced on nursing interventions for the prevention of falls in patients with stroke. The research question elaborated - What interventions nurses to prevent falls in patients with stroke have used?

The selected databases for the bibliographic search were:

- **Latin American and Caribbean Health Science Literature Database (Lilacs),**
- **Nursing Database (BDENF);**
- **Pubmed;**
- **Cochrane;**
- **Web of Science.**

With the use of these various databases, we had the intention to broaden the scope of the research and thus minimize

possible biases. In the LILACS, BDENF and Cochrane databases, we adopted the Structured Vocabulary of Health Sciences Descriptors (DeCS). The descriptors for both were Accidental Falls and Stroke. In the Pubmed and Web of Science database, the terminology used was the Medical Subject Headings (MeSH) of the U.S. National Library of Medicine in English. The controlled descriptors used were Accidental Falls and Stroke. The inclusion criteria established for the studies were: a) available electronically; b) available in Portuguese, English or Spanish; c) comprehensive approaches that address nursing interventions for the prevention of falls in adult and elderly patients with stroke. The exclusion criterion adopted was the following: repeated studies in the databases.

The bibliographic search occurred between September 2016 and March 2017, and each database accessed we are exhausted in a single day, with the recording of the search page. The selection of studies it occurred on subsequent days. After the bibliographic search, the studies initially raised in the databases we read so that the researcher applied, in its entirety, the selection criteria.

The selection of studies was as follows

Pubmed - found 306 papers and 42 (13.72%) we selected; Lilacs - found 13 and 6 (46.15%) selected; BDENF - 4 studies we found and we selected none; Cochrane - 53 papers we found and we selected only two (3.77%); Web of Science - 124 found and 13 (10.48%) selected studies. Thus, in total there were 500 papers found and 63 (12.6%) selected studies, which composed the final sample. For the evaluation of the selected studies, the classification of levels of evidence was used (Melnik and Fineout, 2005). All the selected studies we synthesized according to some characteristics: identification, methodological description, proposed nursing interventions and the levels of evidence of the work, according to an instrument adopted in another study (Chaves *et al.*, 2008). From then on, the interventions we grouped in the thematic categories that we elaborated from the nursing interventions listed in the works read (Cavalcante *et al.*, 2011). The categories were Interventions on Risk Assessment of falls, Interventions in the environment / home and direct care interventions to patients and their families.

RESULTS

The 63 papers found on nursing interventions for the prevention of falls in stroke patients. We categorized these studies according to country of origin, year of publication and level of evidence. Most of the studies have the United States of America and Brazil (29.1% and 11.2% respectively). Regarding the level of evidence, we highlighted the descriptive or qualitative studies - level of evidence VI - followed by well-designed cohort and control case studies referring to the level of evidence IV and later by strong clinical evidence at level I. The Nursing Interventions on Assessment of the risk of falls directed at patients with stroke were: a) use of scales, programs and development of screening tools to determine the risk of falls; (b) research on mobility and medicinal products; c) use of the NANDA-I Nursing Taxonomy for the evaluation of nursing diagnosis Risk for Falls (Morais *et al.*, 2012).

Nursing interventions focused on the environment and at the home of patients with stroke were: a) implementation of home and environment risk assessment activities

programs; b) guidance on increased safety attention in home; c) adaptation of the environment in which the individual lives; e) implementation of a Tele-Assistance System for the home; f) supervision of hospitalization units.

Studies have shown that there should be adaptation and modification of the environment that provides some kind of risk of falls for stroke survivors, especially in restrooms and dormitories. In addition, the implementation of technological means that foster home self-care coupled with well-supplied guidance and nurses' supervision of the environment are effective in preventing falls that occur in hospitals and homes.

Later, we will describe direct care interventions for patients and families with stroke

The interventions found were:

- **promotion of a better vision;**
- **adequate patient and family guidance on drug interactions;**
- **implementation of the practice of imagination;**
- **guidance on stopping while talking;**
- **encouragement of the use of gaiters;**
- **training for those who need assistance in the transfer;**
- **encouraging the practice of specific physical exercises.**

This category consisted of 10 interventions. The most emphasized patient-directed intervention was the nurse's encouragement to use gaiters such as walking sticks, crutches and walkers, which contribute to safer and more independent walking. The authors also argue that the incentive to practice specific physical exercises and home-based nursery-led training are direct care interventions to the patient that contribute significantly to the recovery of motor functions and to the development of self-confidence in the act of wandering. For the relatives and caregivers, the intervention related to the correct orientation of the nurse on the drug interactions, which can cause dizziness, syncope, malaise and predisposes to falls.

DISCUSSION

Most of the complications observed in stroke survivors considerably increase the risk of falls for this public. It is then up to nursing, which has important attention in direct care to the patient, to identify these risks in the nursing consultation, to elaborate and evaluate measures to prevent falls (Costa *et al.*, 2013). In the most different studies found, several instruments have been developed over the years to predict the risk of falls, although the same studies show that it is still difficult to identify patients with stroke prone to fall (Sze *et al.*, 2001). Therefore, this intervention is considered important because it can help nurses in the correct choice of the instruments that will be necessary to support the survivors with risk of fall. Professionals should consider that risk assessment for falls should occur more reliably and more attentively using screening tools and scales. Even in this evaluation, the nurse must verify how the sequelae left by the stroke have interfered in the mobility of the patient, because the greater the degree of dependence of the individual to move, the more prone he will be to the event falls.

This intervention may help the nurse to adopt measures that may contribute to the promotion of a more independent so that the chances of falls can be minimal. Patients with stroke are more susceptible to falls due to the consequences left by the disease, in which they often present hemiplegia or paresis of the lower limbs, which affect the gait of the individual too much and their ability to balance, impairing safe walking (Menezes and Bachion, 2008). Therefore, it is formidable to stress that the choice of interventions in this study should be determined individually for each case, respecting the particularities of the individual.

The inference of the nursing diagnosis Risk of falls, proposed by a taxonomy of international nursing diagnoses (Herdman, 2015), represents an important aid to guide and define the planning of the interventions and to avoid these episodes, since this is one of the stages of the systematization of nursing care (Morais *et al.*, 2012). Therefore, it is believed that this intervention allows the identification and evaluation of the risk of falls from screening tools that are able to assist in the systematization of care and diagnosis, so that appropriate preventive measures are adopted that minimize both the frequency of falls as the risk factors that may surround it. The Brazilian Ministry of Health, observing the risk factors that present themselves to the envelopment of the stroke survivor, proposes that the adaptation of the environment in which this individual lives should be encouraged to become safe and comfortable, especially for those with greater physical impairment, which present difficulties in walking and need to use auxiliary devices such as walking stick, crutches, wheelchairs and people to transfer them from aggravating positions. The application of these interventions contributes significantly to safer ambulation in the environment, to the regression of fear of falling and to a decrease in the degree of dependence (Ministério da Saúde do Brasil, 2006).

The nurse figure, as a member of the team, should be able to manage the main actors involved in health promotion in order to correct, mitigate or influence an environment conducive to autonomy and quality of life (Costa *et al.*, 2013). However, restructuring the environment for patients with a considerable degree of functional dependence remains a difficult task and the patient's and family's interest in the organization or alteration of the environment should continue to be taken into account (Siqueira *et al.*, 2007). It is observed that the number of falls in the home environment is very high, especially in bathrooms and dormitories. Therefore, based on the studies read and discussed, the authors of this study believe that nurses should take preventive actions aimed at eliminating barriers present in these and other rooms in the house that may prevent safe walking. These are: inadequate lighting; use of carpets; location of furniture; absence of non-slip flooring in the bathroom; among other environmental risk factors. Once all these risk factors are eliminated, the individual with stroke will be less susceptible to falls in the home environment.

Knowing that falls prevention is the responsibility of caregivers, family members, and health professionals (Siqueira *et al.*, 2007). The authors emphasize that interventions that address patient and caregiver education regarding risk, drug review and administration, physical examination regular monitoring of eyes, assessment of home safety and attention to the necessary environmental changes are part of prevention programs (Tilson *et al.*, 2012). Therefore, it is believed that these programs can be adopted, since it will contribute to

patient safety mainly. In addition, it is important to plan actions focused on the education, orientation and empowerment of individuals and their relatives about cerebrovascular disease, explaining their risks of falls and their consequences, in order to mobilize the individual and the family to take due care. It is noticed that as a consequence of the aggravations that the stroke affects, some factors increase the chance of regression of self-efficacy and self-confidence to perform daily activities of life.

Among these factors are those that affect the cognitive senses of the individual, especially vision. This ensures that promoting a more efficient vision contributes significantly to the more independent achievement of simple activities and also to raising the client's self-esteem, since many scholars share the same thinking. Guidance focusing on the modification of risk behaviors ensures movements and transfers of patients with safer stroke through the rooms of the house, so the need for training after identifying those who most need assistance in transferring from one environment to the other (Costa *et al.*, 2013). This intervention allows the individual to acquire security and confidence to carry out transfer at home, reducing the probability of falling. Regarding the transfer, it should also be considered that the encouragement of the use of adequately prescribed ancillary walking devices allows a safer ride. As a psychological tool to reduce fear of falling and to improve functional motor performance, the practice of imagination was tabulated as an important intervention, in which the patient is induced to think of a locomotion situation as going up and down stairs, people, walking on slippery surfaces and other means that stimulate the patient's own imagination to perform basic daily activities.

Conclusion

The interventions found may help nurses identify environmental risk factors, recognize patients at risk of falls, and develop a care plan for stroke patients, aiming to minimize the risk of falls for this public. In short, it is up to the nurse to develop preventive actions using screening tools that identify the correct diagnosis of the patient in question, evaluate the risk of falls present, adopt preventive actions within the environment, and guide and educate the patient and their families about the factors risk of falls. The limits of this study are related a survey of nursing interventions for the prevention of falls in a specific public - adult and elderly patients with stroke, without considering a more in-depth analysis on the effectiveness of each nursing intervention raised. The results of this study contribute significantly to nursing, as possible interventions are presented to be applied to patients with stroke and their caregivers, as well as to the environment / home. These interventions may also direct the health professional, especially the nurse, to better manage the nursing care and strategies that aim to improve the quality of life of the client who is incapacitated to perform all daily life activities, as a consequence of the occurrence or which is also in danger of falling.

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