NURSING INTERVENTION IN THE PREVENTION OF FALLS IN THE ELDERLY: *SCOPE REVIEW*

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Abstract: The aging of the population at a global level has increased in recent decades and, as a result of this process, there are several problems, such as the occurrence of falls. Thus, in order for the elderly population to have an active aging process, it is up to health professionals to train them to minimize the risks inherent to the occurrence of falls. Thus, the following question arose: "What are the interventions of the Nurse in the Prevention of Falls in the Elderly in the community?". **Goal**: to carry out a scoping review to identify in the literature nurses' interventions in the prevention of falls among the elderly in the community. **Method:** systematic review of the literature, scope review type, with a search in the CINAHL Complete and MEDLINE Complete databases on 05/10/2022. The question that defined the procedure was supported by the PCC acromion (Population – elderly; Concepts – fall prevention and nurse intervention; Context – community). The scoping review followed the PRISM-ScR guidelines. The selection criteria were: (1) the time factor; (2) the full text; (3) individuals aged 65 and over; and (4) the main subject is: *accidental falls*. **Results:** From a total of 31 articles, only 2 articles were selected. The identified nursing interventions are based on person-centered care, as well as: (1) fall risk assessment; (2) impact of the fall on the individual, if any; (3) determination of available resources and the elderly's motivation to change behaviors; (4) train the elderly in behavior modification and (5) involve the multidisciplinary team in the intervention. **Conclusion:** the implementation of the nursing interventions described above intend to prevent the occurrence of falls in the elderly population in the community.

Keywords: Fall; Elderly; Prevention; Community.

INTRODUCTION

Aging causes physiological changes in the musculoskeletal system, due to balance and mobility, neurological and sensory, with the accentuation of visual problems [1, 2].

The phenomenon of population aging occurs practically all over the world, and in Portugal, the age group over 65 years old corresponds to 23.4% of the national population [3]. The aging rate in Portugal increased from 27.5% in 1961 to 182.7% in 2021 [4].

According to the report: *Step safely: strategies for preventing and managing falls across the life-course*, falls cause the death of more than 600,000 people annually, being considered the second leading cause of death worldwide due to intentional injury. In the age group of 70 years, 75% of falls are fatal [3]. In Portugal, the number of deaths due to accidental falls in 2020 was 1041 deaths [5].

According to the General Directorate of Health (2022) [6], falls account for 7.1% of the cause of death due to *Disability Adjusted Life Years* (DALYs), which correspond to "years of healthy life lost due to premature death" (p. 76), between 2009-2019, increasing its level from the 17th to the 13th. Regarding the analysis of the burden of disease and disability, the *Years Lived with Disability* (YLDs), the drops correspond to 3% of YLDs, representing the 12th in the ranking table in 2019 [6].

The main inherent risk behaviors are the lack of physical activity and sedentary lifestyle, since 2020, have increased due to the SARS-CoV-2 pandemic. Public Health indications to contain the mitigation of Covid-19, passed through confinement at home, increasing the time spent at home. [7, 8]

The family of an elderly person who suffers a fall sees its family dynamics altered due to the dependence of the elderly person on Activities of Daily Living, whether basic or instrumental, leading to an active search for

support from health services, with the need to adapt to the domestic routine [9, 10].

The subject of falls and their prevention, with a focus on risk factors, is under development, with the need for urgent and concrete community responses to what a fall entails for the elderly and their families, which, associated with the huge expenditure of health resources has socio-economic implications for the country. [1, 9, 10]

Primary Health Care, as a gateway to the health system, must guarantee health care in terms of health promotion and disease prevention, and it is essential to train individuals for efficient decision-making in relation to their health. With regard to the subject of falls, the involvement of the multidisciplinary team to reduce intrinsic risk factors is essential. Thus, it is important to train the elderly to modify behaviors that reduce the occurrence of falls. [10]

Intervening in the prevention of falls in the elderly is fundamental, since this problem is part of Public Health. This way, it is important to have a multiprofessional intervention in the community that contributes to the training of the elderly for the prevention of falls, and it is important for nurses as health professionals to implement nursing interventions in the community. Therefore, the following question arose: "What are the interventions of nurses in the prevention of falls in the elderly in the community?", and the objective of this scope review is to identify in the literature the interventions of nurses in the prevention of falls in the elderly in the community.

MATERIALS AND METHODS

It is a systematic literature review of the scope review type, which follows a systematic approach to map evidence on a topic and identify the main concepts, theories, sources and knowledge gaps, which for the study in question is the theme of the prevention of falls in the elderly living in the community. Although there are several scope reviews with the theme of falls, there are few that address the community context, which reinforces the relevance of their accomplishment. [11]

In order to carry out the scope review, given the question mentioned above, the acronym PCC was identified, as follows: Population – elderly; Concepts – nursing intervention and fall prevention; Context – community.

The research was carried out in two databases, CINAHL Complete and MEDLINE Complete, on 05/10/2022, having been defined as inclusion criteria: (1) the time factor, that is, only all articles are considered between 01/01/2017 and 12/31/2022; (2) that presents the full text; (3) covering individuals aged 65 and over; and (4) whose main subject is: *accidental falls*.

Both searches followed the following sequence: (1) identify natural and indexed terms; (2) search for the natural and indexed terms of each component of the PCC acronym, that is, elderly, fall prevention, nurse intervention and community; (3) search with the boolean OR all natural and indexed terms, of each component of the PCC acronym; (4) search with the boolean AND of all the results obtained with the search of the boolean OR; and, finally (5) apply the inclusion criteria mentioned above in the search obtained from the boolean AND. As for the natural and indexed terms chosen in both databases, they are described in Table 1.

After conducting the search in both databases, a total of thirty-one articles were obtained, twenty in CINAHL Complete and eleven in MEDLINE Complete.

To ensure methodological quality, it was used the *PRISMA Flow 2020 Diagram* [12], proceeding to the description of the flow of information found, from the instrument developed by the *Joanna Briggs Institute*,

		CINAHL Complete		MEDLINE Complete	
		Natural terms	**Indexed terms**	**Natural terms**	**Indexed terms**
Population	**Seniors**	*Older person* *Older Adult*	*Aged*	*Older people* *Older Adult*	*Aged*
Concept	**Fall Prevention**	*Fall* *Fall Prevention*	*Accidental Falls* *Safety Behavior Fall Prevention (Iowa NOC)* *Morse Fall Scale* *Fall Risk Assessment Tool* *Fall Prevention (Iowa NIC)*	*Fall* *Fall Prevention*	*Accidental Falls*
	Nurse Intervention	*Nurs* Interventions* *Gerontologic nursing* *Nurs* Experiences* *Health Interventions* *Nurs* Role* *Advanced Practice Nurs**	*Nursing Interventions* *Gerontologic Nursing* *Advanced Practice Nurses*	*Nurs* Interventions* *Gerontologic nursing* *Nurs* Experiences* *Health Interventions* *Nurs* Role* *Advanced Practice Nurs**	*Nurse's Role* *Advanced Practice Nursing*
Context	**Community**	*Home* *House*	*Home, Accidents*	*Home* *House*	*Home, Accidents*

Table 1 - Table with the Natural and Indexed Terms of CINAHL Complete and MEDLINE Complete.

Identification of Studies via Databases

Identification

Records identified from:
CINAHL Complete (n = 20)
MEDLINE Complete (n = 11)

Records removed *before screening*:
Duplicate records removed (n = 7)

Screening

Records screened
(n = 24)

Records excluded for:
Hospital (n = 1)
Nursing Homes (n = 5)
Different Theme (n = 1)
Different Area of Action (n = 1)
Articles of Opinion (n = 3)
Associated with other clinical situations (n = 7)
Nursing Assistants (n = 1)

Reports assessed for eligibility
(n = 5)

Reports excluded:
Lack of Nursing Intervention (n = 3)

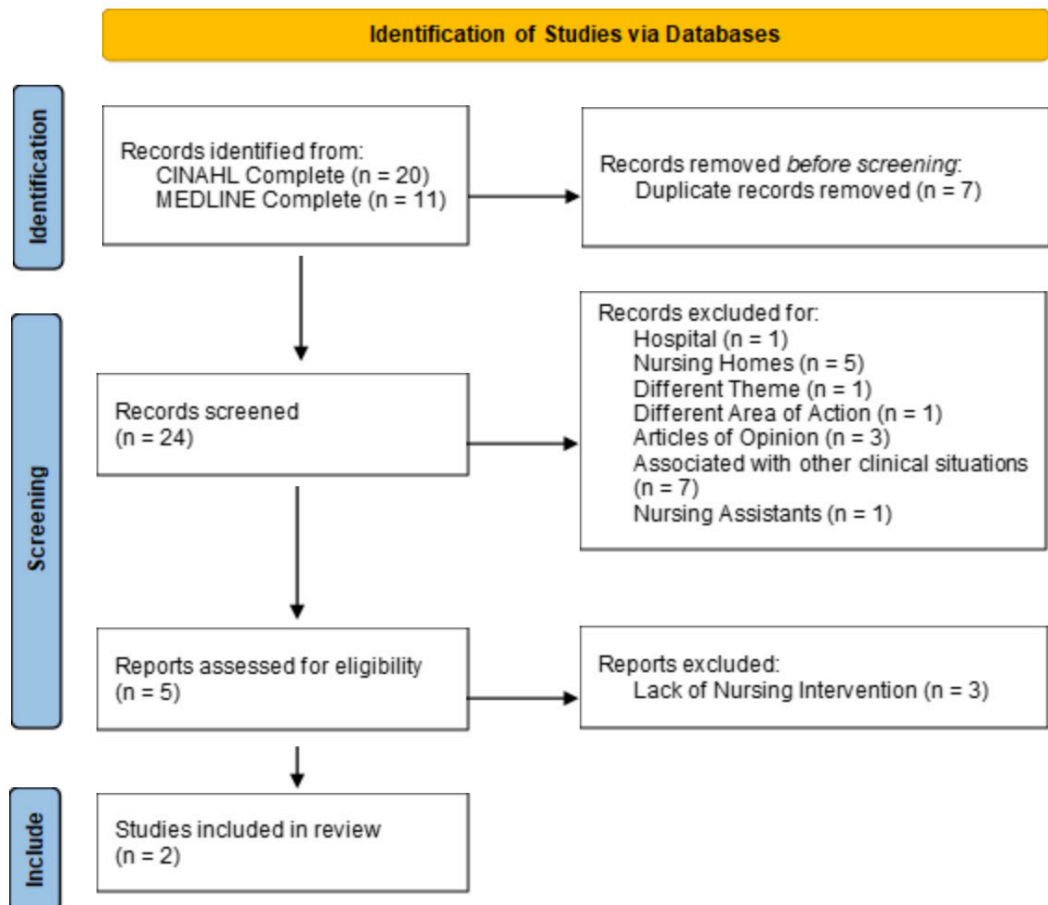**Include**

Studies included in review
(n = 2)

Table 2 – PRISMA Flow 2020 Diagram that was adapted.

which can be found in Table 2. With the application of the instrument, we can conclude that of the thirty-one initial articles found, seven were duplicates. Subsequently, one article was excluded because it addressed the issue in the hospital; five for addressing the issue in institutionalized elderly *(Nursing Homes)*; one article because the topic addressed is different from the topic under study; an article because the area of action is different; three articles for being opinion articles; seven articles were associated with other clinical situations; and, finally, an article for addressing the *nursing assistants*. Of the five final articles, three were excluded because they did not address the intervention of nurses, leaving only two articles. To analyze the two articles, a Table of Data Extraction was constructed, adapted from the *Joanna Briggs Institute* [13], where the data of the articles were inserted, which are in Table 3 and Table 4 respectively.

RESULTS AND DISCUSSION

The aim of this study was to implement a set of tools that prevent falls in adults over 65 years old, who attend multiprofessional education mobile community clinics.

In fact, the nursing interventions, obtained through Table 3, are based, in an initial phase of assessment of the risk of falling, through hetero and self-completion scales, respectively the Scale: *Missouri Alliance Home Care -10 Questions* e a *Stay Independent*. It is also filled in *checklist* with safety guidelines. A telephone follow-up was carried out to the participants, as well as pamphlets and Tai Chi and Yoga exercises were distributed. Taking into account the evaluation of the participants regarding the project, it can be concluded that the telephone follow-ups were an important strategy for educational reinforcement, as well as an incentive for participants to carry out the

proposed activities in order to improve behaviors related to the fall prevention. [14]

In the case study, presented in Table 4, it appears that the nurses' interventions are based on the use of the model: *Public Health Intervention Wheel*. This theoretical framework makes it possible to guide nursing practice in Public Health, by type of intervention and level of practice, that is, whether it works with the individual/family, community or systems. There are a total of seventeen public health interventions (Minnesota Department of Health, 2019). In the article, the interventions that nurses could use to prevent falls in the community are: (1) Case Management; (2) Case Finding; (3) Screening and risk assessment; (4) Health education; (5) Collaboration; (6) Referral and follow-up; (7) Delegation of functions; (8) Counseling; (9) Consultation; and (10) Surveillance. [15]

According to the proposed objective for carrying out the present scoping review, and the data obtained from the research carried out, the results point to: (1) customer-centric; (2) the risk of falling was determined, using its own straight or self-completed scales; (3) if a fall has already occurred, determine the impact it had on the individual; (4) identify available resources; (5) determine the motivation that the elderly person has to change behavior; (6) enable the individual to modify behaviors; (7) involve the multidisciplinary team.

CONCLUSIONS

The prevention of falls in the elderly in the community is a key element for the promotion of active and healthy aging. As Portugal is an aged country, it is up to the Nurse, who is part of a multiprofessional team working in primary health care, to contribute to aging with quality and safety. Thus, training this age group is essential in preventing falls.

Table of Data Extraction	
Article title	*Promoting older adult fall prevention education and awareness in a community setting: A nurse-led intervention*
Author(s)	Tiffani Chidume
Year of Publication	2021
Country of Publication	USA
Goal	Implement fall prevention tools for adults over 65 years old who attend mobile community clinics.
Type od study	Single-Group Before-After Quantitative Study
Target population	Individuals aged 65 and over, who spoke English. (30 participants)
Community location	Community of Le County, Alabama and surrounding communities.
Nurse Intervention	• Fall Risk Assessment with the Scale: *Missouri Alliance Home Care -10 Questions and Stay Independent* (auto fill). • Application of *Check for Safety* (*Checklist* with safety guidelines, *Center of Disease Control and Prevention's of the Initiative Stopping Elderly Accidents, Deaths and Injuries (STEADI)*). • Distribution of the Pamphlet *"What You Can Do to Prevent Falls"* (do *Center of Disease Control and Prevention's* da Iniciativa de *Stopping Elderly Accidents, Deaths and Injuries (STEADI)*). • Telephone follow-up. • Tai Chi and Yoga exercises (30 to 50 minute sessions). • After 2 months, reassessment of the first scales mentioned above. • Five follow-up questions related to possible information improvements regarding fall prevention.
Main results	• Six of the thirty participants who had had an episode of falls within three months of the start of the study. • During the course of the study, there were two participants who fell, however, of the six who had initially fallen, they did not fall again. • The telephone follow-up was important for the educational reinforcement of the pamphlets distributed, and the participants were encouraged to try to do better between follow-ups. • Increase in the training of the elderly, in knowledge and techniques about the risk of falling.
Relevant Aspects for the Prevention of Falls in the Elderly in the Community	The follow-up and informal conversation were important for the behavior change in the participants.
References	Chidume, T. (2021). Promoting older adult fall prevention education and awareness in a community setting: A nurse-led intervention. *Applied Nursign Research.* 57, 1-7.

Table 3 – Article Data Extraction.

Table: Promoting older adult fall prevention education and awareness in a community setting: A nurse-led intervention.

Table of Data Extraction	
Article title	A falls case summary: Application of the public health nursing intervention wheel
Author(s)	Patricia Leahy-Warren, Mary Rose Day, Lloyd Philpott, Kari Glavin, Edith Roth Gjevjon, Anne Kjersti Myhrene Steffenak, Live S. Nordhagen, Hilde Egge, Elizabeth Healy, Helen Mulcahy
Year of Publication	2018
Country of Publication	Ireland and Norway.
Goal	Identify strategies to implement in the prevention of falls
Kind of study	Case study
Target population	Individuals in the community environment.
Community location	Community
Nurse Intervention	Key elements in the nurse's intervention: (1) client-centered approach; (2) assess the impact of the fall on the individual; (3) clarify available resources; (4) clarify the client's motivation to change behaviors; and (5) observation, during the home visit, aimed at the individual's way of interacting with the environment. Interventions to be carried out, according to the Public Health Intervention Wheel: - Case Management; - Case Finding; - Screening and risk assessment; - Health education; - Collaboration; - Routing and follow-up; - Delegation of functions; - Counseling; - Query; - Surveillance.
Main Results	Identification and discussion of ten interventions, according to the *Public Health Intervention Wheel*, justifying its relevance according to the clinical situation addressed.
Relevant Aspects for the Prevention of Falls in the Elderly in the Community	The interventions proposed according to the *Public Health Intervention Wheel,* allow increasing the range of strategies to be used by nurses in the community, to reduce the occurrence of falls in the elderly in the community.
Bibliographic reference	Leahy-Warren, P., Day, M. R., Philpott, L., Glavin, K., Gjevjon, E. R., Steffenak, A. K. M. … Mulcahy, H. (2018). A falls case summary: Application of the public health nursing intervention wheel. *Public Health Nursing*. 35, 307-316.

Table 4 – Article Data Extraction.

Table: A falls case summary: Application of the public health nursing intervention wheel.

Regarding the limitation of the study, due to the lack of primary studies regarding the intervention of nurses in the prevention of falls in the elderly in the community, it limited the research and variety of studies presented.

Although the vast majority of interventions found in the literature can be applied to a large group of individuals, there is a very important aspect addressed, which is person-centered care and the individualization of the intervention. This point allows the elderly to feel integrated, supported and motivated to participate in the activities proposed by the Nurse, that is, individualization of nursing interventions that promote behavioral changes, enhance the health gains of the same.

As for the other strategies found, these include: (1) assessment of the risk of falling, according to a scale suitable for the target population; (2) assessment of the impact the fall had on the individual, if any; (3) assessment of the elderly's motivation to change their behavior; (4) identification of available resources, such as socio-economic, environmental, human resources; (5) train the elderly to change behaviors that potentiate the occurrence of falls; and (6) involve the multidisciplinary team.

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