Community Intervention in Elderly Population: a Fall Prevention Project

ORIGINAL

Vera Coimbra[1], Ermelinda Marques[2], Cristina Requeijo[3], Renata Jabour Saraiva[4]

1 MSc, Nurse, Specialist in Community Nursing, ACeS Douro Sul, Sernancelhe, Portugal
2 Ph.D., Nursing Teacher at Health School-Polytechnic of Guarda/Research Unit for Inland Development-Polytechnic of Guarda, Guarda, Portugal
3 Nurse, Specialist in Community Nursing, ACeS Douro Sul, Moimenta da Beira, Portugal
4 Nurse, Ph.D. in Nursing and Teacher of Education and National Health Manager at Universidade Estácio de Sá, Rio de Janeiro, Brazil.

Contact information:

Ermelinda Maria Bernardo Gonçalves Marques.

Address: Avenida Dr. Francisco Sá Carneiro, nº50; 6300-559 Guarda.
Tel: 351271220191.

✉ emarques@ipg.pt

Abstract

Objective: This article seeks to present a pilot project of community intervention that aims to prevent the occurrence of falls in the elderly in a community setting.

Method: It is a prospective study in the temporal relationship, based on Health Planning, it was developed for 9 weeks in a Community Care Unit in the Northern Region of Portugal. Data collection and interventions were performed in the home of 6 of the 12 elderly being followed up at home by the nursing team. Elderly institutionalized and totally dependent were excluded. For the collection of data, an evaluation protocol was filled out using the Morse scale, validated for the Portuguese population, to assess the risk of falls.

Results: Of the elderly who underwent nursing interventions, 50% presented a high risk of falls. Epidemiological indicators show that the incidence rate of falls was 0% and the prevalence rate of falls, in the last year was, 37.5%.

Conclusion: The data collected was used for the production of epidemiological indicators, structure, process, and results. It is suggested to continue the project for one year, covering a larger sample and subsequent evaluation, and the creation of indicators for informal care providers.

Introduction

The study of the aging population has become a priority area of intervention worldwide, which will lead in the short and long term to changes from a social, economic and healthcare point of view.

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The prevention of falls in the elderly and the promotion of their safety should be part of the intervention of the Nurse Specialist in Community Nursing. This professional should establish intervention projects aiming to solve the identified problems, as well as contributing to the process of training groups and communities [1]

In order to implement these actions, as part of the Primary Health Care reform, the Community Care Unit (CCU) is responsible for delivering health care and social support, at home and in community settings, to individuals, families and more vulnerable groups in situations of higher risk or physical and functional dependence, working in health education, integration into family support networks and in the implementation of mobile intervention units. [2].

In the Diagnosis of the Health Situation of the municipality in the area of intervention of the CCU, demographic indicators were analyzed, and it was verified an increase in the aging index, from 2010 to 2014, of 155.5 to 186.8, which reveals another 31.3 elderly per 100 young [3].

Therefore, aging needs to be approached according to the biopsychosocial and spiritual perspective, so that it can be worked at the community level. Thus, it is defined as being an integral and natural part of life, as a process characterized by biological, psychological, intellectual and cognitive, social and behavioral changes of the personality itself, starting even before birth and being developed throughout the life [4, 5, 6].

However, in people over 65 there is an increased risk factor, the occurrence of falls. Falls are, in fact, the second world cause of death from accidental or unintentional injuries [7]. They are defined as an involuntary event that causes one to lose balance and the person inadvertently reaches the ground or another lower level [8].

Risk factors associated with falls may be multifactorial and reflect the multiplicity of health determinants that directly or indirectly affect well-being [7].

These factors may be biological, such as age and health conditions, acute or chronic, behavioral, socioeconomic, such as social isolation, weak social support network, low income and, lastly, environmental factors that relate to hazards in the surrounding environment, lack of mobility support structures or barriers to mobility in the physical space. The more risk factors a person has, the greater the risk of falls. Some factors can be changed, but not all can be eliminated [9].

However, another classification considers the risk factors for falls such as: internal risk factors inherent to the individual and external risk factors, related to the place and the environment that surrounds them [10]. As external or environmental factors can be pointed out: poor lighting, slippery floors, carpets and lack of support bars.

The home is considered to be the safest place for most people, perceived as a protective barrier to external threats and a guarantee of privacy in daily life. Time spent at home is for most people a very important aspect of individual balance and for the creation and strengthening of an emotional bond. This perception of safety does not invalidate that this space is not the scene of accidents, sometimes serious and, not infrequently, fatal [11].

The consequences of falls can be demarcated at three levels: for patients, for the health system and for the economy [12].

Thus, falls are a factor that generates morbidity, mortality, and dependence that justify intervention measures to minimize risks through appropriate strategies [10]. In addition, they may lead to states of dependence, loss of autonomy, confusion, immobilization and depression, leading to varying restrictions on day-to-day activities [9]. Falls cause 20-30% of mild to severe injuries and 20% of people die one year later due to complications from hip fracture [8]. 5% of the cases result in fracture, with 1% hip fracture. This fracture is responsible for

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a large number of hospitalizations and complications. As a consequence, they can produce functional deterioration due to the injuries they cause and the fear of future falls. Some elderly people, about 40%, restrict their activity level, at least temporarily, and 20% cannot regain their previous activity level, even after 8 months [10].

Fall prevention is a challenge for society and for health professionals.

The United States Preventive Services Task Force (USPSTF) guidelines demonstrate scientific evidence of the effectiveness of primary care interventions in preventing falls in the elderly community. The interventions were grouped into five categories, highlighting in the framework of the theme, the multifactorial understanding of falls, health education and the modification of the dangers present in the home [13].

In a community intervention, the effectiveness of actions involves a combination of measures to promote physical activity, education on risk and protection factors, improving home safety, medication review and individual risk assessment in people with two or more previous falls [14].

As preventive measures, should be included, the assessment of multifactorial risk factors, communication and education on the risk of falls, the implementation of preventive and/or corrective measures or actions from an institutional point of view and the implementation of individualized interventions [9].

The training of the elderly and the implementation of effective measures to prevent falls are especially important in improving autonomy and mobility, with benefits for individual and collective health [14].

There are programs that already stand out in the prevention of falls with the aim of reducing the number of people who suffer them, decrease their frequency and reduce the severity of the injuries they cause. These programs may include several components to identify and modify risks, such as [7]:

- observation of the environment where the person lives to detect the risks;
- clinical interventions to identify risk factors such as observation and modification of medication, treatment of hypotension, administration of calcium and vitamin D supplements, or treatment of corrected visual disorders;
- assessment of the home and modification of the environment in case of known risk factors or history of falls;
- prescribing appropriate assisted devices for identified physical and sensory problems;
- muscle strengthening and balance exercises prescribed by professionals with specific and adequate training;
- group programs at the community level that can incorporate health education to prevent falls and tai-chi type exercises or dynamic balance and muscle strengthening;
- use of hip protectors in people at risk of hip fractures in case of a fall.

Recently, the Health Center Clusters has established the Quality and Safety Committees, which are governed by the National Plan for Patient Safety (2015-2020), one of the strategic objectives "Preventing the occurrence of falls" [9, 15].

Community nursing should contribute to the process of training the elderly in the prevention of falls, and it is essential to develop intervention projects, such as a set of activities that take place within a defined period of time, aiming to achieve a specific result [16].

In summary, it was intended with this pilot project, aimed at the clinical practice, to contribute to the quality and safety of the nursing care provided in specific interventions of risk of falls.

Method

For the development of this work, diligence was carried out with the Director of the Group of Health Centers (ACeS), the Coordinator of the CCU where

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the project was implemented and the Ethics Committee of the Regional Health Administration of the North, from which a favorable opinion was obtained.

To the elderly who participated in the pilot project the research objectives were presented, as well as information that they could withdraw at any time, ensuring the confidentiality and anonymity of all the information collected. Informed consent was obtained from all participants.

Thus, the study aimed to prevent the occurrence of falls in the elderly in the community setting, through the planning of interventions and nursing care aimed at reducing the falls of the elderly being followed up at home by the CCU nursing team.

Specific interventions included training and skills development to deal with risks through health education for the elderly, caregivers and families, assessment of individual risks, and promotion of skills to deal with risk and assessment of risks of falls in the home, promoting a safe environment.

From the need to ensure quality in health and excellence in the professional practice of Nurses, quality standards and programs for continuous quality improvement have emerged. The guiding documents for the elaboration of this project were the Guide for the Organization of Projects for Continuous Improvement of the Quality of Nursing Care (2013) and the Minimum Data Summary and Core Nursing Indicators (2007) [17, 18].

The specific objectives of the project are: to reduce the risk of falls in 5% of the elderly followed by the CCU; to assess the risk of falls in 50% of the elderly; implement specific nursing interventions in 80% of the elderly at risk of falls.

Is the focus of the International Classification of Nursing Practice (CIPE) the: "Risk of Fall," "Environmental Safety in the Home," "Mobility," "Fall in the Past," and "Role of Caregiver" [19].

The aspect of the quality studied was the effectiveness in reducing the incidence of falls and the technical-scientific adequacy. The study unit was all elderly being followed up by the CCU in home nursing visits (12 elderly). Elderly institutionalized and those with total dependency were excluded. This was a prospective study in the temporal relation, for the period of 9 weeks (January, February and March of 2017). The collected data was used for the production of epidemiological indicators, structure, process and results.

The source of information was an evaluation protocol, filled out, during the home visits, by the nurses of the CCU.

The data was recorded in the Shared Services Computer System of the Ministry of Health (Sclínico®). The evaluation was internal and by peers. The evaluation criterion for the Risk of Falls was explicit; to be highlighted: National Program for the Health of Elderly People [4]; National Program for the Prevention of Accidents [20]; National Program for the Prevention of Accidents. Project WITH MORE CARE, for the prevention of domestic accidents with elderly people [14] and Morse Scale [21]. The risk of falls was assessed using the Morse scale. Janice Morse, author of the Morse Fall Scale, began building the scale in a pilot project in 1985, in 1989 published the article "Development of a Scale to Identify the Fall-Prone Patient." The scale is being applied at international level. In Portugal it is used in several hospitals and the Directorate-General for Health indicates the need to evaluate the risk of falls as an appropriate and personalized intervention for prevention. It was validated for the Portuguese population by Costa-Dias, Ferreira and Oliveira (2014), obtaining authorization from the authors for use in this study.

Reliability was tested by the degree of agreement of the scores provided by three nurses, independently of each other. This degree of agreement ranged from 0.615 to 0.964 and the corresponding interclass correlation coefficient was 0.838.

According to the evaluation, the sum of the scores obtained in each of the six items resulted in a score indicating the risk of falls. This score ranges from 0

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Table 1. Criteria/activities developed.

Criteria / Activities	Exceptions	Clarifications
- Identify the elderly over 65 in a community context; followed at CCU; - Evaluate history of falls; - Apply the Morse Scale; - Identify risk factors for falls; - Assess ambulation and balance; - Record the risk assessment using the Morse scale in the Sclínico; - Formulate the nursing diagnosis according to the degree of risk; - Formulate a Nursing care plan for the elderly person with risk of falls; - Perform Nursing interventions for the elderly person at risk of falls.	- Institutionalized elderly; - Fully dependent elderly.	- DGS guidelines; - Nursing Care Plan according to CIPE.

Source: (January, February, March, 2017.

to 125 points and people are itemized according to the risk of falls: no risk (0-24), low risk (25-50) or high risk ($\geq$ 51) [21].

Table 1 presents the planning of activities for the implementation of the project.

Results

The risk of falls in 6 elderly was evaluated, with the objective of evaluating the risk of falls in 50% of the elderly clients, followed up at home by the CCU nursing team.

The risk of falls was assessed using the Morse scale, and it was verified that 50% of the elderly in the sample had a high risk of falls and the same percentage had a medium risk of falls.

All the elderly were the target of nursing interventions in the area of falls prevention, surpassing the goal of 80% of the elderly at high risk of falls, benefiting from nursing interventions.

During the visits, information materials on fall prevention were distributed and individual training was carried out. All evaluations and interventions were recorded in Sclínico®.

The following indicators, **Table 2**, allow us to evaluate the effectiveness of the project, and the need to apply specific indicators, of evaluation, which can demonstrate the validity and relevance of the actions to the population.

Table 2. Evaluation of epidemiological, structure, process and result indicators.

Variable	%
Epidemiological Indicators	
Falls Incidence Rate	0
Falls Prevalence Rate	37.5
Structure Indicators	
% of elderly people at risk of falls who benefited from falls prevention interventions:	100
Process Indicators	
% of elderly people at high risk for falls	50
% of elderly people at risk of falls with monthly records on the Morse Scale	100
% of elderly people at risk of falls with nursing care plans	100
% of elderly people with a nursing diagnosis adequate to the level of risk of falls	100
% of elderly people with nursing interventions adequate to the level of risk of falls	100
Diagnostic effectiveness rate	100
Process Indicators	
Effectiveness rate in falls prevention	100

Source: January, February, March, 2017.

Discussion

In the development of this study, it was verified that the elderly and their families adhered to the project, being an aspect facilitating their implementation, the fact that the interventions were carried out at home.

For any intervention to be effective, it is necessary that the elderly are actively involved and understand the relevance of the intervention. It is recommended to observe the environment where the person lives to detect the risks [22]. Home visits are important in preventing falls, allowing the assessment and modification of environmental risk factors at home [7].

Evidence has shown a reduction in the number of elderly residents in the community who fall at home after an intervention, although they have more effect in high-risk groups [23].

Multifactorial interventions are effective and recommended in the prevention of falls in the community, and all should address health promotion, raise awareness of the risk factors for falls, and inform strategies to reduce them [24].

It was demonstrated that the nurse specialist in community nursing contributes to the process of training groups and communities, developing a work in partnership and an interdisciplinary team, and articulating knowledge from the area of communication and education sciences. It is fundamental to research and diagnose risk factors of specific communities, ensuring effective, integrated, continued and adjusted care always adapting the information, and promoting strategies and health education to community characteristics [1].

In spite of the small number of participants in the project and the short period of time in which it was developed, it was pertinent for each elderly person to perform a multifactorial evaluation of the causes of falls and individualized interventions. It involved the work of the entire CCU disciplinary team, although the community was not involved and partnerships were not established. Thus, community participation in the development of fall prevention programs should always be considered in order to achieve a more holistic understanding of the elderly [25].

This project, in addition to meeting the specific competencies of the nurse specialist in community nursing, was based on the common competences of the specialist nurse, since these professionals should make an important contribution to quality improvement and have competencies in this field: designing, managing and collaborating in programs of continuous quality improvement and creating and maintaining a safe and therapeutic environment [26].

The prevalence of clients' falls is an indicator of safety and health quality and an indicator sensitive to nursing care [21].

Conclusion

This pilot project allowed the evaluation of the risk of falls in 50% of the elderly followed up at home by the CCU nursing team for a period of 9 weeks; 50% presented a high risk of falls and with equal percentage, medium risk. They were all the target of interventions in the prevention of falls, thus meeting the objective of the study. As a contribution, it was suggested to continue the project for a period of one year in the same unit and to replicate it in the other functional units of the Health Center Grouping, covering a larger sample, and later evaluation, also proposing the creation of indicators for informal caregivers.

The project was also presented to the Quality and Safety Commission of the Health Centers Grouping, to be given continuity and so that the care provided is of quality, and consequently, attain health gains in this age group.

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