











REVIEW

## Rehabilitation nursing in promoting health literacy in the elderly and preventing falls

### Enfermería de rehabilitación en la promoción de la alfabetización en salud en personas mayores y la prevención de caídas

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#### ABSTRACT

The aim of this study was to map the available scientific evidence on the intervention of rehabilitation nurse specialists in the promotion of health literacy, with an emphasis on the prevention of falls in the elderly. The literature review suggest a positive relationship between adequate Health Literacy and a lower prevalence of falls, although more studies are needed to consolidate this association. The promotion of Health Literacy in the context of falls prevention can be operationalized in three main areas: identification and assessment of risk factors; mobilization and provision of resources; education, teaching and training. Within the scope of their competencies, rehabilitation nurses play a central role in developing and implementing strategies that promote the empowerment of the elderly, providing tools that facilitate informed decision-making and the adoption of behaviors aimed at preventing falls.

**Keywords:** Health Literacy; Fall Prevention; Elderly; Rehabilitation Nursing.

#### RESUMEN

El objetivo de este estudio fue mapear la evidencia científica disponible sobre la intervención de enfermeras especialistas en rehabilitación en la promoción de la alfabetización en salud, con énfasis en la prevención de caídas en ancianos.

La revisión de la literatura sugiere una relación positiva entre una adecuada alfabetización en salud y una menor prevalencia de caídas, aunque se necesitan más estudios para consolidar esta asociación. La promoción de la alfabetización en salud en el contexto de la prevención de caídas puede implementarse en tres áreas principales: identificación y evaluación de los factores de riesgo; movilización y provisión de recursos; educación, enseñanza y formación. En el ámbito de sus competencias, las enfermeras de rehabilitación juegan un papel central en el desarrollo e implementación de estrategias que promuevan el empoderamiento de las personas mayores, brindando herramientas que faciliten la toma de decisiones informadas y la adopción de conductas orientadas a la prevención de caídas.

**Palabras clave:** Alfabetización en Salud; Prevención de Caídas; Ancianos; Enfermería de Rehabilitación.

## INTRODUCTION

The continuous growth of the elderly population is an undeniable demographic reality, with significant projections for the coming decades. According to the World Health Organization (WHO),<sup>(1)</sup> the population aged 60 and over is expected to increase substantially, from 1 billion in 2020 to 2,1 billion in 2050. In Portugal, this phenomenon is equally evident, with the number of elderly people expected to grow from 2,2 million in 2018 to around 3 million in 2080.<sup>(2)</sup> The ageing index, which compares the elderly population to the young population, is expected to almost double by 2080, from 159 to 300 elderly people for every 100 young people, reflecting a profound demographic transformation.<sup>(3,4)</sup>

Population ageing, despite representing an achievement of modern society, brings with it challenges related to maintaining health and functionality, health, well-being and quality of life.<sup>(5,6)</sup> In this context, health literacy (HL) plays a central role and is defined as a set of knowledge and skills acquired through daily activities, social interactions and intergenerational transmissions. Such knowledge and skills are shaped by organizational structures and the availability of resources, which enable people to access, understand, evaluate and apply health information and services, promoting the improvement of individual and collective health.<sup>(7)</sup>

The high prevalence of falls in the elderly increases the risk of serious injury, disability and mortality and is a global and national problem. The incidence is particularly high in the over-65s, especially among older people, particularly women.<sup>(8,9)</sup> This data reinforces the urgent need to develop and implement strategies to prevent falls, given the significant impact on functionality, health, well-being and quality of life of the elderly population.<sup>(10,11)</sup> Preventing falls reduces morbidity and mortality, as well as helping to reduce health costs and improve the quality of life of the elderly, making it a priority for health systems.<sup>(9,12,13)</sup> However, the effectiveness of these interventions can be significantly compromised or even nullified in populations with low HL, which highlights the need to strengthen HL as an essential component for successful fall prevention in the elderly.<sup>(14,5,16)</sup> The literature review corroborates the high prevalence of low levels of HL among the elderly population.<sup>(17,18,19,20,21)</sup> In this context, the promotion of HL in the elderly to prevent falls is an ongoing challenge in which rehabilitation nurse specialists (RNS) play a crucial role, given their competence in this area. The aim of this narrative literature review was to map out the available scientific evidence on the intervention of the RNS as a promoter of HL in the elderly to prevent falls.

## METHOD

A narrative literature review with a qualitative approach was adopted to develop this research, in order to provide a broad and interpretative view of the state of the art, allowing a critical analysis of the available evidence on the role of the RNS in promoting HL in the elderly and preventing falls. The stages developed included defining the research topic, conducting the search in the defined scientific sources, selecting and extracting the relevant studies, analyzing and presenting the findings, culminating in the presentation of the conclusions.

This narrative literature review was conducted by consulting scientific articles in the following databases: Scopus, PubMed, SciELO and Google Scholar. In addition, the websites of national scientific associations and government platforms were analyzed. In order to broaden the scope of the research, the bibliographical references of the selected articles were also examined, with the aim of identifying potentially relevant studies not found in the electronic databases.

The search was carried out between 28/11/2024 and 20/02/2025. The inclusion criteria were articles available in full in Portuguese, English and/or Spanish and published between 2020 and 2025. The following words were used as descriptors: “Health Literacy”, “Fall Prevention”, “Elderly”, “Rehabilitation Nursing”. The search strategy combined keywords and Boolean operators AND/OR to cover relevant and comprehensive sources. In total, 78 papers were included that were considered relevant to this review.

## DISCUSSION

### Promoting active and healthy ageing

As a result of advances in science and technology, there have been significant changes in population structures in recent decades. All over the world, as the years go by, the number of elderly people in the general population is constantly increasing.<sup>(22,23,24)</sup>

Population ageing is undoubtedly an achievement that reflects economic, social and biomedical progress.<sup>(22,24)</sup> Promoting active and healthy ageing throughout the life cycle has been presented not only as a response to demographic ageing, but also as a strategy to guarantee longevity with health, quality and dignity, benefiting both individuals and communities.<sup>(25,26,27,28)</sup>

This phenomenon is not only related to longevity. It involves the maintenance of well-being and also encompasses the promotion of conditions that allow individuals to maintain their functional capacity, health and active participation in social processes.<sup>(6,22)</sup> Thus, the increase in life expectancy requires constant concern and reassessment in order to ensure that people live not just longer, but better.

Although human ageing is a natural part of the life cycle,<sup>(4,29,30,31)</sup> it encompasses a series of challenges and adaptations to the set of structural, biological, functional, psychological, social and environmental changes that constitute it. These changes make the elderly more vulnerable and fragile, making them more susceptible to illness, loss of autonomy and dependence.<sup>(21,23,29,30,31,32,33,34)</sup> It is imperative to minimize the consequences of this process in order to maintain maximum functionality, quality of life and well-being as people age.

### Factors associated with falls in aging and fall prevention strategies

According to the WHO<sup>(9)</sup>, a fall is defined as “an event that causes a person to inadvertently fall to the ground, floor or other lower level.” These incidents constitute a substantial risk to the health and well-being of the elderly, and can result in a reduction in their ability to preserve and maintain their maximum functionality and autonomy.

Falls are the second leading cause of death from unintentional injuries worldwide. Every year, an estimated 684,000 people die from falls worldwide, of which more than 80 % occur in low- and middle-income countries. In all regions of the world, mortality rates are highest in adults over 60 years of age.<sup>(9)</sup> According to data from the Centers for Disease Control and Prevention,<sup>(12)</sup> millions of people aged 65 and over suffer from falls every year, with a prevalence of more than 25 % among this age group, i.e. more than one in four elderly people experience a fall every year. A systematic review of the literature by Salari *et al.*<sup>(35)</sup> reveals that the prevalence of falls in older people is 26,5 % worldwide.

In Portugal, a research study documented 40,842 episodes of falls in people aged 65 and over, of which 31,4 % occurred in people aged 85 and over. The data also reveals that the incidence of falls is significantly higher in women, and that around two thirds of incidents occur at home. Furthermore, it was observed that falls account for more than 70 % of injuries in the elderly population who use emergency services.<sup>(8)</sup>

These data show that the high prevalence of falls in the elderly population is a reality. In fact, there is an increased risk of falls in the elderly.<sup>(13,36,37)</sup> Falls represent the main cause of injury in individuals aged 65 and over, and are one of the most prevalent and significant events in terms of morbidity, disability and mortality in this age group.<sup>(16,38,39)</sup> In fact, studies show that injuries to the elderly caused by falls lead to a loss of functionality, causing disability, hospitalizations, early institutionalization, increased health costs and even death.<sup>(12,40,41)</sup> The literature shows that people aged 65 and over are more susceptible to fatal outcomes or serious injuries from falls, and this risk increases with age. This increased risk is associated with the physical, sensory and cognitive changes resulting from the ageing process, combined with environments that are not adapted to an ageing population.<sup>(9,14,36,37,42)</sup> According to the Centers for Disease Control and Prevention,<sup>(12)</sup> falls in the elderly are common, costly and can be prevented. Focusing on fall prevention can not only save lives, but also improve the quality of life of the elderly and reduce the burden on health systems.

Given the high incidence of falls among the elderly population and their significant impact on functionality and quality of life, it is essential to implement effective preventive strategies. The literature shows that most risk factors (intrinsic and extrinsic) can be modified, which reinforces the importance of personalized and multidimensional interventions. Therefore, the early identification of risk factors, together with the implementation of preventive programs based on scientific evidence, should be a priority in the clinical practice of specialist nurses.<sup>(9,14,43,44,45,46,47)</sup> However, the effectiveness of implementing these prevention programs and strategies can be substantially reduced or even nullified in populations with low HL.<sup>(14,15,16)</sup>

### Health literacy and falls prevention

HL is a multidimensional concept which, according to the WHO<sup>(7)</sup> “represents the knowledge and personal skills that accumulate through daily activities, social interactions and generations. Personal knowledge and skills are mediated by organizational structures and the availability of resources that enable people to access, understand, evaluate and use information and services in order to promote and maintain good health and well-being for themselves and those around them”. (p.6)<sup>(7)</sup> As a modifiable determinant of health,<sup>(47)</sup> HL refers to the set of individual knowledge and skills acquired through daily activities, social interactions and intergenerational transmissions. It represents the organizational structures and resources and personal skills that enable people to access, understand, evaluate and use health information and services efficiently in order to maintain and/or improve health, both at an individual and collective level.<sup>(48,49)</sup> It is a multidimensional and dynamic construct that has received increasing attention in the scientific literature, mainly due to its relevance in promoting health and improving people’s quality of life.

According to Nutbeam and Lloyd,<sup>(48)</sup> there are three distinct levels of HL, which can be conceptually subdivided into functional, interactive and critical, with a progression that goes from the most elementary level (functional) to the most complex (critical). At the functional level, HL refers to the basic skills for obtaining and using health-related information. The interactive level covers the ability to extract and interpret health information, apply new knowledge to changing circumstances and participate in interactions to expand information and make decisions. The critical level, the highest level, implies the capacity for critical analysis

and self-control in health management.<sup>(48,49)</sup> In this context, the level of HL affects a person's ability to engage in health promotion processes and decision-making, directly influencing health outcomes.

The promotion of HL, with the aim of empowering specific groups, is established as one of the priority areas in the National Health Literacy and Behavioral Sciences Plan 2023-2030, drawn up by the Directorate-General for Health (DGS), in line with the National Health Plan.<sup>(19,50)</sup> This emerges as a fundamental need, as low levels of HL are associated with higher rates of hospitalization, mortality and premature death, as well as poor adherence to the therapeutic regime, decreased prevention and worse health status, having a negative impact on individual and collective health.<sup>(51,52,53,54)</sup>

There is a consensus in the literature that HL levels in the elderly are low.<sup>(17,18,19,20)</sup> On the other hand, accidents due to falls are frequently observed in this age group<sup>(9,55)</sup> and most of them result in complications that significantly compromise their functionality, quality of life and well-being.

A research study by Li et al.<sup>(57)</sup> reveals that elderly people with adequate HL have a lower prevalence of falls. The same study concluded that HL is one of the determinants of healthy ageing, but there are few studies exploring the relationship between health literacy and the occurrence of falls.

The RNS has a wide field of intervention in the promotion of HL for the prevention of falls, considering its specific competencies,<sup>(58)</sup> as well as the Regulation of Quality Standards for Specialized Care in Rehabilitation Nursing,<sup>(59)</sup> which encompass health promotion and the prevention of complications.

When we reflect on the concept of HL, we are implicitly addressing issues related to knowledge acquisition, skills development, informed decision-making, empowerment, health, well-being and longevity.<sup>(60)</sup> In this context, the RNS presents itself as an essential link in the promotion of HL, mobilizing and making resources available, providing personalized education/teaching and instruction/training, as well as strategies for health management and autonomous and informed decision-making, with the aim of enhancing quality of life, empowerment and adherence to prevention and/or treatment for users.

As stated by the WHO<sup>(9)</sup>, fall prevention strategies should focus on promoting educational and training programs, creating safer environments, prioritizing research into the phenomenon of falls and developing effective public policies aimed at mitigating risks. In this sense, and considering their competencies, the RNS<sup>(58,61)</sup> acts as a promoter of older people's HL for fall prevention in three main areas: identification and assessment of fall risk factors; mobilization and provision of resources in the field of fall prevention; education, teaching and training for fall prevention.

The evidence shows that it is essential to ensure that a systematic and continuous assessment of the risk of falls is carried out, especially in the elderly, given its crucial role in preventing incidents.<sup>(62,63,64)</sup> Thus, fall prevention must include the assessment of multiple risk factors, the communication and dissemination of information about the risks involved, the implementation of preventive and corrective measures at an institutional level, as well as the carrying out of personalized interventions.<sup>(65)</sup>

A review of the literature by Park et al.<sup>(16)</sup> reveals that nurses should recognize and assess patients' level of HL as a potential risk factor for falls, adopting personalized preventive interventions according to their level of HL. In this context, the RNS has added competencies<sup>(58,59)</sup> which make them able to carry out an accurate and thorough risk assessment. They carry out a detailed assessment of the user's physical and cognitive conditions, thus identifying risk factors that may contribute to falls. They draw up an individualized care plan that includes teaching and training activities of daily living, rehabilitation exercises, environmental adaptations and teaching and training safe mobility strategies.

In the light of scientific evidence, the guidelines for fall prevention advocate the adoption of a multifactorial approach, in which targeted interventions should be integrated and adjusted to the particularities of each individual.<sup>(62,63)</sup>

### Implications for the formulation of health and aging policies

Quoting the results of a Scoping Review by Fernandes et al.<sup>(66)</sup> Interventions that prevent falls in the elderly are multifactorial risk assessment, environmental change, exercises to maintain muscle strength, body balance and the ability to walk, as well as the ability to perform basic activities. The RNS must carry out a comprehensive assessment of the elderly person at risk of falling, using validated assessment tools. The interventions implemented must be in line with the risk factors identified. These include training in muscle strength, balance, gait and environmental modification.<sup>(66)</sup>

A study carried out by Silva et al.<sup>(67)</sup> concludes that the RNS plays a key role in managing the risk of falls and implementing effective measures to prevent their occurrence, ensuring an improvement in the quality of care provided and patient safety.

When talking about the Rehabilitation process, it is essential to remember that the health education process is at the heart of the preventive rehabilitation process, where elderly users assessed by nurses can start the health education process aimed at minimizing falls or the risk of falling, a process named by the Fall Prevention Education (FPE).<sup>(68,69)</sup> Fall prevention education (FPE) is one of the strategies used to reduce the occurrence of

falls and the associated costs.<sup>(70)</sup> It is crucial that the process of raising awareness of fall prevention begins with education about the risk factors associated with falls.<sup>(63,71,72)</sup> This approach will help to improve the knowledge and awareness of the elderly in terms of recognizing the risks of falls, enabling the early implementation of preventive strategies.<sup>(42,63)</sup>

Assessing older people's knowledge deficits is the first step towards implementing individualized and appropriate instruction.<sup>(68,73)</sup> All older people should be advised on falls prevention and physical activity.<sup>(63)</sup> Older people are interested in participating in fall prevention behaviors if they perceive that their risk of falling is modifiable. Understanding older people's perceptions of their fall risk and prevention strategies is essential to engaging older people in fall prevention.<sup>(74)</sup>

The RNS's intervention in the areas of knowledge and learning the person's skills promotes empowerment, decision-making and the transition to action. In this way, it contributes to the development of skills and competencies that make the person feel capable of dealing with the challenges that arise in everyday life as a result of transition processes.<sup>(75)</sup> From this perspective, in partnership with the elderly person, resources are mobilized and strategies developed with the aim of promoting their training and empowerment, with a view to mobilizing effective skills, competences and behaviours in the field of fall prevention.

It is the responsibility of the RNS, within the scope of their competencies,<sup>(57,60)</sup> to mobilize education and health promotion strategies aimed at empowering the elderly person, providing information, knowledge and tools that enable the elderly person to make decisions and adopt appropriate behaviors aimed at preventing falls. Tools that provide well-founded, structured information in a language adapted to the target population help to increase adherence to and adoption of health-promoting behaviors.<sup>(76)</sup> The prevention of falls in the elderly is an area of intervention in which information tools (manuals, leaflets, videos) are often used, usually as part of the educational component of multifactorial programs.<sup>(77)</sup> However, it is essential to take into account the variability in the health literacy of the target population when constructing these materials, taking into account the principles of health literacy adequacy recommended by the Health Literacy INDEX.<sup>(78)</sup>

The literature review corroborates the view that promoting HL is a determining factor in reducing the risk of falls.<sup>(13,14,16,38)</sup> The urgent role of nursing in the prevention of falls is of indisputable importance and of such magnitude that it cannot be minimized or neglected.<sup>(67,71)</sup> Thus, it is imperative that the RNS integrate the promotion of HL as preventive strategies aimed at reducing the risk of falls among the elderly.

### Limitation

As a limitation to the research carried out, we would highlight the scarcity of specific studies that address, in an integrated manner, the intervention of the RNS in the promotion of HL, with an emphasis on the prevention of falls in the elderly. Although there is ample scientific production related to the prevention of falls in the elderly and the HL of the elderly, there is a gap in the literature that integrates these two areas of study.<sup>(57)</sup> The lack of robust and targeted evidence in this area highlights the need to develop future studies that explore this interface, in order to substantiate and enhance the specialized practice of rehabilitation nursing, contributing to the creation and development of interventions based on scientific evidence, which favor the promotion of HL for the prevention of falls in the elderly population.

### CONCLUSION

Promoting the HL of the elderly in the prevention of falls is crucial for developing skills that enable autonomous and informed decision-making. As well as helping to identify and mitigate risk factors, it contributes to effective interaction between older people and health services, professionals and other interlocutors. In this context, the role of the RNS is particularly important. Through educational strategies, the RNS trains the elderly to understand risk factors, recognize warning signs and adopt appropriate preventive behaviours. In addition, they act as a facilitator in mobilizing and making available resources aimed at preventing falls, thus contributing to the implementation of effective strategies in this area. In this way, the work of the RNS promotes the autonomy and safety of the elderly, reducing the risk of falls and promoting their quality of life, with a positive impact on the health and well-being of this population.

It is therefore imperative to develop and implement strategies and tools that encourage adherence and the adoption of preventive behaviors, taking into account the different levels of health literacy in the elderly. Finally, given the scarcity of studies on this subject, it is considered essential to carry out further research into the relationship between the promotion of health literacy, the occurrence of falls in the elderly and the role of the RNS. Only in this way will it be possible to guarantee a holistic and integrated approach, based on evidence, with a view to promoting quality of life and reducing the risk of falls in the elderly.

This approach will make it possible to consolidate the RNS's intervention as a central element in the promotion of HL and the prevention of falls in the elderly, in line with effective care strategies, thus helping to improve the quality of life of this population. In this context, it is essential to develop studies using rigorous methodologies and standardized assessment instruments in order to generate robust scientific evidence to

support care for the elderly in the context of promoting HL and preventing falls.

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