


Functional health literacy from the perspective of gerontological nursing: an integrative literature review



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Abstract

Objective: To perform an integrative review of literature on functional health literacy from the perspective of Gerontological Nursing. *Method:* a study was made of the MEDLINE, PubMed, LILACS, IBECs, BDENF and CidSaúde databases, and studies published in Brazilian and international publications during the period of 2005-2014 were included. The studies were selected by main subject, such as education of patient, health literacy, schooling, the elderly, health education and self-care. *Results:* 58 studies were found, of which 33 were pre-selected, but only 17 composed the final sample, 15 of which were international and two of which were Brazilian. *Conclusions:* the results indicate an integration of knowledge of the assessment of functional health literacy among the elderly. Inadequate literacy was evident, indicating an excessive impact on health management, especially among those with chronic disease. Additionally, inadequate understanding of times and doses when taking medicine highlights that new strategies can be designed to bring empowerment and greater control to health.

Key words: Health Literacy; Health Education; Elderly; Nursing.

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INTRODUCTION

Functional Health Literacy (FHL) involves the “degree to which individuals are able to obtain, process and understand the basic health services and information required in order to make adequate health decisions”.^{1,2} FLH has also been correlated with the ability of an individual to understand aspects of self-care and the health system, prior to making these decisions.³ Health Literacy (HL) is a descriptor that involves the study of the influence of literacy on the context of health.⁴ This concept was translated to Portuguese as health literacy and, in the mid-1980s, with the appearance of this new field of study, the words *letramento* (literacy), *illettrisme* and *literacia* were used in Brazil, France and Portugal, respectively.⁴ However, conceptually, there is still a certain amount of debate surrounding the applicability of health literacy in social practices.^{5,6}

FHL is cited in a report issued by the Ad Hoc Committee on Health Literacy for the Council on Scientific Affairs, from the American Medical Association (AMA),⁷ as an expansion of HL, implying the operationalization (practical) of literacy in the concept itself.⁸ The two terms are used interchangeably.⁹

The term Functional Health Literacy is used in the present study as it is used in Brazilian studies identified in the literature of this area (health).^{4,8} Studies have reported that FHL is a relatively new concept in the area of health promotion.^{9,10} It is also considered an emerging field in the areas of education and health promotion.⁴ FHL has attracted the interest of researchers, health professionals and public policy creators, due to its complex, multi-dimensional and interdisciplinary nature, as well as the impact that poor literacy can exert on an individual, their family, the community and the health system.^{8,10-12}

FHL is a functional condition that involves multiple dimensions, which are interwoven into a complex network of health determinants, including: sociodemographic characteristics

(occupation, income, social support, culture and language); cognitive abilities (cognition and memory); and physical abilities (age, vision, audition and verbal fluency). These determinants interact among each other, although it is important to consider macro aspects from each country, such as the educational system, the health system, and the cultural and social aspects that transversely permeate these determinants. Individuals with less education, lower salaries and the elderly may be more vulnerable.^{13,14}

As well as the determinants that can affect FHL, a conceptual integrated model was recently proposed,¹⁵ which is capable of capturing the main dimensions of the already existing models. This model includes other factors, such as access to health information, understanding and awareness of this information, and the ability to assess and make adequate use of the same, which are considered essential to the development of the decision-making abilities that will prevent or maintain the health status of the individual.

In the perspective of this integrated model,¹⁵ the process is continuous, regardless of whether the person is already sick, is at risk of getting sick, or is participating in a prevention system/health promotion project in their community, workplace, educational institution, among others.¹⁶

FHL initially attracted interest from researchers in developed countries, such as the USA, in 2003, when the National Assessment of Adult Literacy (NAAL) was carried out. This survey assessed 18,000 people and confirmed that 36% exhibited limited FHL,⁴ which was also correlated with a lower quality of health and greater costs, both at an individual and collective level.^{16,17}

In Brazil, this subject has not been studied in great detail and requires greater investment in order to strengthen and improve healthcare strategies and practices.¹⁸ For comparative purposes, 60% of the population of Canada exhibit inadequate FHL, and this figure rises to 88% among the elderly population.¹⁹

The World Health Organization (WHO), through the Commission on Social Determinants of Health, identified FHL as one of the social determinants of health, since it can contribute to an improvement in the individual's ability to access, understand, assess and communicate information in a manner that will improve their own health, as well as that of their family and community.¹³

Several authors have stated that inadequate FHL seems to be more common among the elderly and those with lower incomes. The lives of the elderly can be significantly affected by FHL, particularly older elderly people and those with chronic health conditions, who are more likely to require healthcare services and complex therapeutic procedures.^{7,20}

The concept of FHL has become more significant and has started to generate more specific debates, particularly about its use in assessments of individuals with chronic diseases such as cancer and diabetes. It has also become more important in the areas of Odontology and Nutrition, highlighting correlations with health.⁸

There is an expectation that this concept, which is based on the preexisting competence of individuals in the health environment and the results of its application, could drive future projects/interventions to instruct the elderly in relation to preventative measures and health promotion.¹⁸

This segment concerned itself with investigating and divulging the subject of FHL, questioning the trends of scientific production in the area of gerontological nursing. Therefore, the aim of the present study was to perform an integrative literature review on the theme of functional health literacy from the perspective of gerontological nursing.

METHODS

This exploratory study involved an integrative literature review of the theme of

FHL, with a focus on gerontological nursing. An integrative review is a specific method that summarizes previous empirical or theoretical literature in order to provide a clearer understanding of a particular phenomenon.²¹ The aim of this research method is to analyze previously constructed knowledge on a determined theme in published articles. Integrative literature reviews also enable the synthesis of several previously published studies, generating new knowledge based on the results of previous research.^{21,22}

The following Inclusion criteria were applied: studies published in national and international journals between 2005 and 2014; in which FHL was the main focus of studies of the scientific production of gerontological nursing; or that stressed the importance of the role of the nurse in the assessment of FHL. The following studies were excluded: studies duplicated in one of more database; unpublished nursing theses and dissertations; and studies conducted with people aged under 60 years.

The literature review was performed based on the terms health literacy and elderly, as described in the Virtual Health/Nursing Library (BVS). The studies were located in the MEDLINE, PubMed, LILACS, IBECs, BDENF and CidSaúde databases, based on the following main subjects: education of patients; health literacy; education; elderly; health education; health promotion and self-care. The studies selected originated in North America, Europe, Asia, South America and the Caribbean. The languages included were English, Spanish and Portuguese.

RESULTS

Based on these search criteria, 58 studies were found in the databases, of which 33 were pre-selected. However, only 17 were structured along the lines of a final sample for analysis and discussion. The results of these 17 studies are displayed in Figure 1.

Figure 1. Synopsis of the results from studies found on the theme of Functional Health Literacy (FHL). 2014.

Order of the articles	Year of publication	Main objective	Synopsis of the results of the study
A 1	2005 ¹⁰	To analyze the concept of FHL in health in order to determine its meaning, reduce ambiguity and promote consistency in the use of the concept in nursing research.	The study correlated attributes to FHL, such as reading and arithmetic ability, comprehension, capacity to use health information and make adequate decisions. Consequently, health improves through self-reports, reduced healthcare costs, greater awareness, less time spent in hospitals and less frequent use of health services. The study concluded that analysis of the concept of FHL increased the capacity (and precision) of nurses to assess levels of FHL among patients and to identify those at risk of not understanding healthcare instructions or not able to read adequately, thereby hindering their adherence to the recommendations of healthcare professionals.
A 2	2008 ³³	To describe the role of FHL in health as an indicator of health education programs.	The authors highlighted that health promotion campaigns are vehicles for health literacy and that this strategy was vital in the determination of the health of the population, in terms of a macro vision of health. They also informed the readers of the tools used to estimate the health literacy of an individual, including the Rapid Estimate of Adult Literacy Medicine (REALM), the Short-Test of Functional Health in Adults (Short-TOFHLA) and the National Assessment of Adult Literacy (NAAL). The authors suggested that nurses should adopt health education strategies using health education projects, resources from the internet and community-empowering technology in order to improve the health literacy of their patients and thus, to increase the effectiveness of these programs.
A 3	2009 ³²	To investigate the correlation between FHL, chronic health conditions and the functional status of elderly Koreans in a community.	Korean residents living in a community with low literacy rates exhibited significantly higher rates of chronic diseases and a poorer subjective health status.

Order of the articles	Year of publication	Main objective	Synopsis of the results of the study
A 4	2009 ³⁴	To identify the correlation between FHL and health status, and to provide basic data for the development of nursing interventions for elderly Korean and Chinese individuals in Yanbian, China.	The tool used was a questionnaire containing five items suggested by the Chinese Ministry of Health in 2008. The level of FHL was high (68.7%), as were general health levels. The elderly individuals received high scores for taking medications according to the guidance they had been given and low scores for a complete understanding of communication with doctors. The authors concluded that health status through self-report was the most influential, followed by FHL, age and gender. FHL is the main factor that affects health promotion among the elderly, highlighting the importance of developing health promotion programs for elderly individuals with low FHL.
A 5	2010 ³¹	To identify factors associated with self-management support experiences during primary healthcare meetings.	The authors considered health literacy to be a significant factor in the care of patients with chronic diseases, particularly in vulnerable populations.
A 6	2010 ³⁵	To examine the HL and confidence of patients in terms of controlling glycaemia	A positive and significant correlation was found between socioeconomic conditions and HL and between knowledge about diabetes and HL. The author highlighted the exploration of new education strategies for this disease, even suggesting that further studies assess the role of HL in the control of glycaemia
A 7	2011 ³⁰	To determine the prevalence and demographic associations of limited HL among hospitalized patients and to identify the etiology perceived and any compensatory strategies used.	The prevalence of limited HL among the elderly was approximately 60%, although 36% were attributed to visual difficulties. In addition, 62% relied on assistance from a health professional when they needed to read and understand health information, while 23% relied on the help of a family member.
A 8	2011 ²⁷	To assess the correlation between HL and self-care among patients with heart failure.	The results of the study showed that HL was positive when correlated with the maintenance of self-care, but negative when correlated with its management.

Order of the articles	Year of publication	Main objective	Synopsis of the results of the study
A 9	2011 ²⁶	To determine the prevalence of inadequate HL and to analyze differences in HL levels based on socio-demographic characteristics, knowledge and the rate of readmission after 30 days among patients who were hospitalized for heart failure.	Adequate HL was found in 39% of the patients with heart failure. This rate is considered lower than those reported in other states of the USA, but comparable to the rates found among Hispanic and African-American patients. A negative correlation was found between HL and age, which worsened as age increased. These differences could be attributed to the presence of chronic disease. The authors suggested that health literacy and education could be addressed in interventions and should be the focus of more detailed discussions.
A 10	2011 ²⁸	To describe the process of transcultural adaptation for an instrument that analyzes the HL of the elderly.	The local population had access to a tool that assessed the HL of the elderly, a theme which is rarely addressed in Brazilian gerontological studies. Nurses were able to analyze the impacts of HL on the elderly.
A 11	2011 ²⁹	To determine the levels of HL and responsibilities reported by non-familiar caregivers contracted by elderly individuals.	In total, 35.7% of the caregivers of elderly individuals (mean age of 83.9 years) exhibited inadequate HL. The authors highlighted that the caregivers had difficulties in following medical instructions related to the medication of the elderly, and 60.2% of these caregivers made mistakes with medications in the test, thereby confirming their difficulties in following the instructions on the label. In total, 85.7% of the caregivers had difficulties with other health-related tasks, such as how to remember, classify and distribute medication.
A 12	2011 ⁴⁶	To investigate the concept of HL and its correlation with communication and the education levels of patients.	Nurses have an obligation to communicate in a clear and purposeful manner that fulfills the exclusive information needs of each patient. The results of this study highlighted that evidence-based strategies that promote HL should be incorporated into the healthcare plan of each patient and become part of the daily routine of nurses.
A 13	2012 ²⁵	To identify the challenges associated with the literacy of the elderly and the experience of managing their health.	The interviewees emphasized that inadequate HL exacerbated health management problems, particularly in relation to medication dosages and schedules.

Order of the articles	Year of publication	Main objective	Synopsis of the results of the study
A 14	2012 ¹⁸	To analyze how elderly people linked to health education groups in a basic healthcare unit seek, understand and share information in order to promote health throughout their lives.	The results of this study supported the planning, implementation and improvement of health education projects for the elderly in basic health care services.
A 15	2013 ²³	To examine the correlation between HL among elderly African-American individuals with arterial hypertension and adherence to treatment protocols.	Age and health status were predictors for adherence to treatment, particularly among younger individuals with worse health conditions.
A 16	2013 ²⁴	To compare estimates of the HL of patients with the level of instruction and self-reporting.	According to the authors, nurses tend to overestimate the abilities of HL and this could represent a professional error that affects the readmission rates of patients with a low level of FHL.
A 17	2014 ³⁶	To examine the application of interactive communication, the use of jargon and the impact of HL on the health education of nurses in primary care, working with patients who suffer from type 2 diabetes in Alberta, Canada.	HL did not seem to effect communication patterns. However, nurses used less jargon and words that they considered incompatible with patients who exhibited inadequate HL. The authors concluded that the excessive use of medical jargon hinders the understanding and retention of information that the individuals need in order to adequately manage and control their diabetes. The authors also stated that nurses need to develop more effective ways of applying critical concepts to the management and education of those being treated for chronic diseases.

Based on the literature review of this theme, respecting the abovementioned inclusion/exclusion criteria and time period (2005-2014), it is clear that studies related to FHL are scarce in Latin America, including Brazil, in terms of the area of gerontological nursing. Of the 17 studies analyzed, 15 were carried out in English speaking countries,^{10,23-27,29-32,34-37,45-46} with two in Portuguese, both of which were conducted by nurses.^{18,28}

Concerning the specific theoretical body of nursing and the assessment perspective of FHL, nursing care is significant, since it involves possible Nursing Diagnoses (ND). These can be used in situations involving a risk to the health of an elderly individual due to inadequate FHL, such as in the case of the control/lack of control of diseases of the endocrine system or diabetes (Figure 2).⁴⁷

Figure 2. Nursing diagnoses, risk factors or factors associated with low levels of FHL among people with diseases of the endocrine system – diabetes. 2014.

Signs and symptoms	Nursing diagnoses	Associated factors or risk factors
Polydipsia, polyphagia and polyuria can indicate: A lack of knowledge in relation to basic health practices; A failure to maintain scheduled appointments; A failure to include treatment regimes, with objective tests for physiological measurements and indicators.	Inefficient health maintenance: D1= health promotion. Class 2= health control.	Inefficient individual response; Insufficient financial resources to acquire equipment to confirm the presence of capillary glycaemia, for example.
	Sedentary lifestyle: D4= rest/ relaxing activity. Class 2= activity/exercise.	Poor knowledge of the health benefits of physical activity; lack of motivation.

Source: Silva ERR, Lucena AF et al. (2011, p.167).⁴⁷

The results displayed refer to analysis of the main focus identified in the studies selected, stressing the impact of low FHL on the management of chronic disease and health, particularly in relation to medication schedules and dosages. They also reveal the assessment of FHL from the perspective of the scientific production of gerontological nursing.

It is important to stress that this theme is interwoven with other themes, particularly in relation to health promotion, communication, health information and the participation of the nurse in this network, all of which establish the complexity of FHL.¹⁵

DISCUSSION

Based on the results of this literature review, functional health literacy (FHL) emerged as a topic of great international concern in most of the studies.^{10,23-27,29-36,45,46} Since 2005, nurses have identified this theme as a challenge to effective self-care.

These studies^{10,23-31,33-36,46} also emphasized that inadequate FHL is highly prevalent among the elderly, perhaps reflecting a weakness in the health system, in which older individuals are required to play a more active role in the management of their own health. Strategies of health literacy could be given more attention by healthcare providers.

Another study indicated that more than 50% of all adults and elderly individuals experience difficulties when attempting to understand instructions related to taking their medication or using their health plan, and are consequently correlated with a greater risk of hospitalization and a greater use of resources.³⁸

FHL is also referred to as one of the factors that affects competence (knowledge) in reading comprehension and numeracy, or an association of the two. A study conducted in the USA with 383 adults suffering from type 2 diabetes correlated low levels of numerical literacy with less effective control of glycemia.³⁹ This result may have been due to the fact that FHL is correlated with the

ability to read and understand the information contained on bottles of medicine, cards and appointment slips, as well as other materials associated with health control.^{11,40,41}

A study involving adults and elderly individuals (n=95) with heart failure reported that FHL was inadequate in 42% of the participants and that this percentage worsened with advancing age and a low level of education.²⁹ Education levels have been discussed as a predictor for the ability of an individual to understand and apply health information adequately. A study conducted in the Northeast of Brazil also assessed FHL and confirmed that the education level of the participants was low, particularly among women.¹¹

Similarly, a study conducted in Curitiba-PR in 2011 assessed 72 elderly individuals in relation to FHL in old age, noting that 71.9% of the participants had only attended elementary school. Of these, 23.6% did not even finish this level. When asked if they liked to read, 37.2% gave disjointed or insufficient responses, indicating that they had not understood the question and may exhibit restricted literacy levels.⁴²

The same authors also reported that this condition depends on a complex system that involves an understanding of what is around us, as well as the effective use of writing. These factors are essential so that the elderly individual can feel at ease in our society, which is basically mediated by reading and writing. However, this study did not use any standardized tests to assess the literacy of the elderly and was restricted to a general comprehension of reading and writing, which was not specific to the area of health.⁴²

Participants with adequate literacy exhibited improved confidence in relation to self-care. Readmission rates were also higher among those with inadequate or marginal literacy.^{29,43}

In a study conducted in the USA with adults and elderly individuals aged 65 years or

more (n=3260), researchers found that 33.9% exhibited inadequate or marginal FHL. The authors paid special attention to education levels and cognitive impairment, which were correlated with low FHL and declined with advancing age. In the opinion of the authors, these findings could affect the results.²⁰

In this context, inadequate FHL can have several consequences on the health of the elderly, particularly when it is not addressed in projects/interventions. Studies have highlighted the following consequences: increases in healthcare costs; reduced or false knowledge about diseases and treatment protocols; lower competence in terms of health management; less capability to care for people with chronic conditions; medication errors; incapacity to deal with success in healthcare systems and inadequate health services.^{37,40,43}

A number of theoretical models for FHL, such as that proposed by Mancuso,³⁷ argue that it does not occur statically but is the result of constant movement and has evolved over a long period of time, encompassing attributes such as capacity, comprehension and communication. These are preceded by competencies (knowledge). People with a certain level of health literacy or education have the potential to influence other individuals and society as a whole.

In order to better understand this complex concept, Nutebeam¹⁴ proposed dividing the field of literacy into three types: basic or functional literacy (which requires the basic skills of reading and writing); communicative/interactive literacy (referring to cognitive abilities and more advanced literacy) and critical literacy (requiring more advanced cognitive and social abilities, which can be applied critically in different situations in life).

When referring to FHL, several studies allude to these attributes as a condition for health promotion and suggest that low literacy levels could favor the appearance of chronic diseases.⁴⁴

A study in the USA monitored a group of elderly individuals for close to six years and reported that those with inadequate FHL exhibited less knowledge about health, worse self-management of chronic diseases, less use of preventative services and consequently, worse health conditions. The authors also indicated that these individuals were at a greater risk of death due to cardiovascular disease, when compared with other diseases.⁴⁵

Concerning conceptual models of FHL, Sorensen et al.,¹⁵ based on a systematic literature review, analyzed 12 concepts and four dimensions of FHL in the domains of healthcare, disease prevention and health promotion. The authors proposed a model integrating knowledge from the areas of medicine and public health, stressing that this new conceptual model could lead to the development and validation of tools. In addition, this up-to-date integrated conceptual model of FHL was constructed from the perspective of the individual throughout his or her life, based on an individual and population context. The aim of this model was to empower individuals to improve their health conditions.

In this context, intervention measures associated with the following themes can have an impact: attitudes and knowledge related to health; motivation; behavior intentions; and personal competencies. Other factors include social influence (participation, training the community, social standards and public opinion), health policies and organizational practices (political declarations, legislation, regulations and the allocation of resources).³⁷ These factors are correlated with the field of the educational system, social mobilization and the defense of groups (not only the individual), thereby creating a true “web of interactions”.³⁷

Concerning the participation of gerontological nursing in the assessment of FHL, as well as the

perspective of using the resources of FHL, it was clear from the studies assessed that nurses play an important role in the communication and health education process of the elderly, with several authors stressing that nurses should spare no effort in their attempts to educate the elderly during their daily routine.^{31,35,48} It was also notable that most of the studies analyzed in this review used the concept elaborated and adopted by the Institute of Medicine (IOM).²

In Brazil, Nutrition, Odontology, Medicine and Education professionals are already investing in the creation of technology that can assist them during assessments of FHL, including the Health Literacy Assessment Test (TALES), which will help in correlations between FHL and different clinical outcomes.¹⁷

Furthermore, researchers in the area of gerontological nursing have also begun to invest in this issue, following the lead of other countries such as the USA, Canada, England and France, who already use assessment tools for both numerical and textual comprehension. Nurses in Brazil, especially in the South of the country, have contributed by translating and validating Canadian instruments for use with elderly individuals in Brazil.²⁸

Concerning the different methods of assessing FHL, most of the studies analyzed in this review used the short version of the Test of Functional Health Literacy in Adults (S-TOFHLA), which assesses the FHL of an individual, regardless of their level of education. This test also classifies FHL as inadequate, marginal or adequate, based on the score obtained in the textual and numerical comprehension questions. These questions involve a situation that is common for individuals who use these healthcare services. The test exists in English and Spanish and was validated in Brazil in 2009.⁴

The literature also refers to the Rapid Estimate of Adult Literacy Medicine (REALM). This was the first tool used in the USA to assess FHL, although it was only applied in one of the studies analyzed in this review.³³ This test was developed by Davis et al.⁴⁸ and involves word recognition and a questionnaire containing 125 terms. There is also a reduced version, with 66 words, involving the recognition of different parts of the body and different types of disease. Both versions are limited in that they only assess the ability of reading.¹⁷ This test has not been validated for use in Brazil and none of the studies carried out by Brazilian nurses made use of this assessment tool.

It was also notable in this review that FHL is not only inherent to the health of an individual, but involves other dimensions in the context of our lives. This dimensionality can be noted in the study conducted with caregivers (of the elderly) who exhibited inadequate FHL.²⁹ In other words, their competence and abilities were limited in relation to medical guidance and medication schedules and dosages for the elderly. This highlights how important it is for nurses to develop their ability to assess FHL and to employ health education strategies with the elderly, as well as with their caregivers and families. As a consequence, these individuals will be empowered in terms of self-care, and will learn to see FHL as a process that is established in several stages, as demonstrated in the model created by Sorensen et al.¹⁵

In addition, this review also addressed the different strategies that nurses can use in their daily activities to prove the impact of FHL on the quality of health assistance and above all, basic healthcare services.¹⁸

The main limitation of this literature review was the scarcity of scientific production on FHL among the elderly population of Brazil. This

limitation may have hindered a more in-depth discussion of FHL in this population, although it is hoped that these results will encourage future studies on this theme.

FINAL CONSIDERATIONS

Based on the results found in the studies selected, assessments of functional health literacy are important for health promotion.

The conceptual approach comes from public health and integrates several attributes, such as competencies, comprehension, information and communication, which are essential for individuals who care for themselves and for caregivers who work with the elderly population, and can reflect the quality of health care.

There is a notable lack of studies in Brazilian literature on the scientific production of gerontological nursing. These results indicate the integration of knowledge about the assessment of functional health literacy among elderly individuals with chronic diseases, among whom a low/inadequate FHL was evident. This greatly impacts their health management and leads to the inadequate comprehension of medication dosages and schedules. These results could stimulate a search for new education and information strategies.

According to the literature identified as assessments of FHL, there are a number of possibilities that could be explored in the Brazilian nursing area, including the use of light and inexpensive healthcare technology, which instigates new productions and could improve health education resources, nursing assistance methods and the training of human resources. These would lead to an empowerment of the elderly population, as well as their families and the community as a whole, in terms of being able to control their health more adequately.

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