

# RIASE

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## **FUNCTIONALITY IN OLDER ADULTS: INTEGRATIVE REVIEW OF LITERATURE**

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## ABSTRACT

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**Objective:** to discuss the publication of scientific articles in the area of health about the functionality of older adults and the main collection tools implemented.

**Method:** it was used integrative review, as it allows the search, the critical evaluation and synthesis of the available evidence of our subject, being its product the current state of this subject in publications, as well as identifying gaps that lead to the development of future research. Starting by defining the descriptors, we used the operator <<terminologia em saúde>> [health terminology], which identified terms relevant to study with the descriptors <<funcionalidade>> [functionality] and <<idoso>> [older adult].

**Result:** twenty-five (25) articles met the criteria for inclusion and exclusion.

**Conclusion:** we can consider that there is a standard protocol for the functional evaluation. The Brazilian studies in the health field that punctuate the functionality of older adults in daily activities show that this field is not yet saturated.

**Keywords:** Older adults; health; functionality; publishing; review.

## INTRODUCTION

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Aging is a process that involves hereditary factors, environment action, diet, type of occupation and lifestyle as well as the social context. It is an evolutionary phenomenon, marked by specific changes, correlated with the passage of time<sup>(1,2)</sup>.

As people get older, there are several changes, among them, the weakening of muscle tone and bone formation, which can lead to change in the posture of the trunk and lower limbs, accentuating further the curvature of the thoracic and lumbar spine. In addition, the joints are stiffened, reducing movement and producing changes in balance and in walk<sup>(3)</sup>. Changes also occur in the protective reflexes and balance control, undermining thus the body mobility and predisposing the occurrence of falls and risk of fractures, causing serious consequences on functional performance<sup>(3,4,5)</sup>. Other conditions become frequent, such as difficulties to eat due to muscular condition itself that slow down and take away the coordination of structures involved in the act of chewing and swallowing, and frequent loss of dental elements that compromise the ability to eat and nutrition<sup>(6)</sup>.

Functional capacity refers to the capability to perform the activities of daily living (ADLs) or to perform a particular action without need for aid, covering two types of activities: basic and instrumental<sup>(5)</sup>. To have or not the functional capacity completely influences on the

quality of life of the older adult<sup>(7)</sup>. The impairment of functional capacity of older adults has important implications for the family, the community, the health system and for the life of the older adults themselves, since this causes greater vulnerability and dependency in old age, contributing to the decrease of well-being<sup>(3,7)</sup>.

The basic activities of daily living (BADLs) consist of the self-care tasks, such as bathing, dressing and feeding oneself and are based on the Katz index<sup>(7)</sup>. This measure reflects a substantial degree of incapacity<sup>(7)</sup>. In general, the more difficulty a person has with the BADLs, more severe is its incapacity<sup>(7,8)</sup>. The prevalence of difficulty or need for help with BADLs is lower than the prevalence of functional disability measures<sup>(8,9)</sup>.

Instrumental activities of daily living (IADLs) are the skills of older adults to manage the environment in which they live, including preparing meals, doing housework, laundry, handling money, use the telephone, taking medications, shopping and using the means of transport<sup>(8)</sup>. However, the term functionality encompasses all functions of the body and the ability of the individual to perform relevant tasks and activities of the daily routine as well as their participation in society<sup>(10)</sup>.

Based on the considerations presented, this study aimed to synthesize the scientific literature about the functionality of older adults in the past ten years, to know the profile of those publications, since the health status of older adults has not been evaluated only by the presence or absence of disease anymore, but also by the degree of preservation of their functionality<sup>(11)</sup>.

## METHOD

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We opted for this study the use of the method of integrative review, since it allows us the search, critical appraisal and synthesis of available evidence of the subject analyzed. The final product of this study allows us to know the current state of this knowledge, as well as identifying gaps that lead to the development of future research on the subject and contributes to a more critical thinking that everyday practice needs, becoming an instrument for an evidence-based practice<sup>(12)</sup>.

For the careful writing of this integrative review, we had, as plan, the realization of six phases: 1. Preparation of a guiding question; 2. Search or sampling in the literature; 3. Data collection; 4. Critical analysis of included studies; 5. Discussion of results; 6. Presentation of integrative review<sup>(12)</sup>. This study was developed from the following guiding question: "what is the profile of the research about the functionality in older adults in health care over the last 10 years?"

It is important to point out that the next step was to carry out the search for scientific articles on literature, from the process of definition of the descriptors. The bibliographic survey of this review was conducted in April 2015, in the Biblioteca Virtual em Saúde (BVS-Brasil). We used the operator “*terminologia em saúde*” [health terminology] where we identified terms relevant to the studies with the keywords in Portuguese: <<*Funcionalidade*>> [Functionality] AND <<*Idoso*>> [Older adult]. After the initial search, the inclusion criteria used for the selection of the samples were: scientific article with full text; in the Portuguese and Spanish languages; published between the years of 2004/2014.

All these inclusion criteria were marked on the advanced search filter. Exclusion criteria considered: studies that do not involve older adults; articles fleeing the thematic “functionality in older adults”; studies not available in full; integrative review articles and/or systematic, theses and/or dissertations.

In the data collection phase, it was applied a tool named Formulário de Registro (Registry Form), validated, which was filled for each article of the final sample of the study, allowing to obtain all the necessary information<sup>(12)</sup>, such as Year, Journal, Qualis, Related issues with the functionality and Instruments for collection used. For obtaining the Qualis it was accessed, at the time, the Webqualis (now this access is through the Sucupira platform) through the Journal Title with interdisciplinary assessment area.

Such filling was achieved after reading the titles, abstracts and methodology of the selected studies. Then, we proceeded to the quantitative analysis of the data, which were organized in worksheets in Microsoft Office Excel 2007. The results were expressed by numerical representations, following the systematic simple frequency distribution, by absolute values and percentages in tables. The critical analysis and discussion of the results were based on preliminary readings of distinct and related material from the implications of the search to then perform the presentation through frames and tables with descriptive statistics.

It was not necessary to submit research project to the Ethics and Research Committee for having been used secondary data in public domain. The data used in this study were properly referenced, respecting and identifying perpetrators and other research sources, observing ethical rigor regarding intellectual property of scientific texts searched<sup>(13)</sup>.

## RESULTS AND DISCUSSION

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We initially found 269 articles, but with the use of the filter the search resulted in a total of 106 articles. After reading the titles and abstracts considering the inclusion and exclusion criteria, our sample went to 25 articles. Among the 81 dropped, we had 12 studies available, 10 dissertations and theses, 20 did not fit in the theme and 07 were repeated. This result highlights the scientific studies covering the functionality and the older adults with high representativeness in the databases of the BVS, but with a considerable number of texts not available, making it difficult to spread and update about the theme.

Regarding the year of publication, the inclusion criteria encompassed articles published from 2004 to 2014. We showed that 20% of publications occurred in 2009, followed by 24% in 2010 (Table1). The results show that subject Functional Capacity is arousing more and more interest of researchers in health. Studies emphasize that the adoption of the *Estatuto do Idoso* (Statute of the Older Adult) in Brazil, in September 2003, followed by the *Política Nacional de Saúde da Pessoa Idosa* (National Health Policy of the Older Adult - PNSPI), adopted in 2006, which has as its central focus the promotion of healthy aging and maintenance of functional capacity, are marks that boosted the study in this area and therefore an increase in the number of publications<sup>(14,15)</sup>. The journal that leads in publications with the theme was the *Revista Fisioterapia e Pesquisa* with 12 articles.

Following with the data collected in the Registry Form, it is important to develop the definition of the term Qualis before commenting the data found on it. The Qualis is the set of procedures employed by the *Coordenação de Aperfeiçoamento de Pessoal de Nível Superior* (Capes) for stratification of intellectual production of quality postgraduate programs<sup>(16)</sup>. This process was designed to meet the specific needs of the evaluation system and is based on information provided through the application Data Collection. The classification has annual update and follows a series of criteria defined by CAPES such as number of copies circulating, number of databases that is indexed, number of institutions that publish in the journal, among others<sup>(16)</sup>.

Still according to the CAPES, the classification is drawn up and coordinated by a committee of consultants in each area and undergoes annual update process. Dissemination vehicles, cited in intellectual production of postgraduate programs, are included in the indicative categories of quality and, by inference, the work released itself, getting mentions, respectively from largest to smallest. The strata are divided into eight levels, in order of quality<sup>(17)</sup>. These are: A1 (high quality), A2, B1, B2, B3, B4, B5, C (low quality)<sup>(16,17)</sup>. It is possible to evidence that the sample focuses on a high stratum B1, but does not identify an excellence, encouraging henceforth more publications in strata A1 and A2.

Table 1 - Description of the main characteristics of the 25 selected articles.

Year	Journal	Qualis
2007	Einstein	B2
	Rev Esc Enferm USP	A2
2008	Rev Bras Med Esporte	B1
	Acta Fisiatra	B2
2009	Rev Bras Epidemiol	B1
	Fisioterapia e Pesquisa	B1
	Fisioterapia e Pesquisa	B1
	Fisioterapia e Pesquisa	B1
2010	Jornal Brasileiro Psiquiatr	A2
	Rev Bras Clin Med	B3
	Rev Bras Fisioter	B1
	Fisioter Mov	B1
	Rev Baina de Saúde Pública	B2
	Rev Baina de Saúde Pública	B2
	Rev Bras em Promoção da Saúde	B3
2011	Rev Rene	B2
	Acta Fisiatr	B2
	Ciênc & Saúde Coletiva	B1
2012	Ciênc & Saúde Coletiva	B1
	Rev Dor	B2
2013	Motriz Rev de Educação Física	A2
	Rev Esc Enferm USP	A2
	Rev Bras Clin Med	B3
2014	Rev Bras de Ciên Mov	B2

Source: Survey data, 2015.

It should be noted, in the evaluation of the studies, that the authors of the articles reported a correlation between diversity of themes with functionality, starting from the physical health of the older adult, addressing in its vast majority the evaluation of functionality and functional capacity, physical performance, mobility and factors that may be associated with the amendments arising or not from the aging process. The functional capacity of the older adult includes the ability to perform physical tasks, the preservation of mental activities, and a proper situation in relation to the social integration<sup>(18)</sup>. Therefore, the functional assessment seeks to verify in what level the diseases prevent the performance of daily activities of older adults autonomously and independently, allowing the development of a more adequate care plan. It is a parameter that, associated with other health indicators, can be used to determine the effectiveness and efficiency of the proposed interventions<sup>(14)</sup>.

In search of a standardization of concepts, the World Health Organization (WHO) has developed, from the International Classification of Diseases (ICD), already drawn up, the International Classification of Impairments, Disabilities and Handicaps (ICIDH), focused on the non-communicable morbidities and after consecutive reviews, published the International Classification of Functioning, Disability and Health (ICF). On November 15, 2001, the ICF was accepted by 191 countries as the new international standard for describing and evaluating health and disability. The proposal of this classification is to identify how people live with their health problems and what can be done to improve their conditions.

Currently, the version used and updated of the CIF, revised and published in 2004 in Lisbon, says: **Disability** is a term that includes impairments, activity limitation or participation restriction. **Functionality** is a term that encompasses all the body's functions, activities and participation. We can infer that the union of the two terms Disability and Functionality means that an individual can have limitation to perform some function, either by physical disability or simply by restriction on participation caused by environmental changes. Environmental factors are considered crucial factors that influence the functionality and inability of the individual, because they involve the environment/space that the individual needs to live and to correlate<sup>(1,19)</sup>, which justifies the correlation of this theme with the sociodemographic factors and many others extracted and cited in the sample of this study.

Thus, the functional assessment is vital to the detection of the older adult's functionality, with ability to capture, evaluate, and point out the functional limitations of the individual<sup>(19)</sup>. It is applied periodically to identify changes and provide means for the development of actions that allow a longer time of autonomy and welfare to the older adult. To make this assessment, we used instruments capable of measuring, diagnosing and developing a proper prognosis of the health condition of the older adult, thus contributing to the development of research, screening and clinic evaluation<sup>(19,20)</sup>.

The choice of instrument to be used is judicious and made by a professional who will consider the dimensions that aim to assess whether it is physical, psychological, functional, or social, among others. Among the existing instruments in our sample, the most cited were: *Katz scale* (The Index of Independence in Activities of Daily Living), *Lawton and Brody*, *Barthel Index*, *FIM/MIF* (The Functional Independence Measure/*Medida de independência funcional*), *Berg scale*, *MMSE* (Mini Mental State Examination). To a greater empowerment of those instruments, it was deemed necessary to define and clarify their use.

The assessment tool developed by Sidney Katz (Index of Independence in Activities of Daily Living - Index of ADL) is widely used in national and international surveys. It was developed when the United States of America faced a high number of older people in society

with diagnosis of chronic diseases<sup>(20)</sup>. Katz and collaborators employed efforts for the development of an instrument to assess the functional independence in patients' ADLs. The evaluation of this instrument consists in pointing out the ability of the individual in bathing, dressing, going to the bathroom, moving, their continence and feeding. It can be classified into six types of independence and two types of dependency in its original version. On its most current version, it generated a sort of independence, moderate dependence and too much dependence<sup>(8,20)</sup>.

Another instrument frequently used in the evaluation of the activity of daily living is the Barthel index. This instrument assesses 10 items (feeding, dressing, bathing, personal hygiene, intestinal and urinary sphincter, transfer of the chair and of the bed, and walking up and down stairs) and has clinical application of fast and easy filling, with validity and reliability proven in several studies. The score ranks the older adults as independent and dependent<sup>(19,20)</sup>.

On the other hand, the Lawton scale evaluates the instrumental activity of daily living; this aims to identify changes in the implementation of the functional tasks of older adults in different levels. Adapted to the Portuguese language, the scale evaluates the use of telephone, housework, use of medicines, washing, shopping, preparing meals, use of means of transport and the use of money. The classification is divided into: total dependence, partial dependence and independence<sup>(20)</sup>.

The Functional Independence Measure (FIM) was established in 1984 by the American Academy of Physical Medicine and Rehabilitation and the American Congress of Rehabilitation Medicine and translated in 2001 by Ribeiro et al., who tested and highlighted that this instrument should be applied by trained evaluators, since it is a tool sensitive to change and clinically very useful<sup>(20)</sup>. This instrument aims to quantify the solicitation degree of care required during tasks of daily living. In it, 18 activities gathered in two areas (motor and cognitive) and six subscales (self-care, transfers, transportation, sphincter control, communication and social cognition) are evaluated. According to the respondent, each of these activities is evaluated and receives a score from 1 (total dependence) to 7 (complete independence) obeying an increasing level of independence, with the total score ranging from 18 to 126 points. The classification of an activity in terms of dependence or independence is based on the need to be assisted by someone else and, if help is needed and in what proportion<sup>(20,21)</sup>.

Nevertheless, research in Gerontology and Geriatrics use as an inclusion factor the cognitive capacity of older adults through the Mini Mental State Examination (MMSE). This has been employed in large population studies or bound to neuropsychological batteries tests<sup>(20)</sup>.



Another predictive factor of functionality is the assessment of balance, where the Berg Balance scale can be used. This scale was created in 1989 by Katherine Berg to evaluate balance in individuals over 65 years; it is a reliable instrument that has had widespread use, being translated and adapted to the Portuguese language by Miyamoto; Lombardi Junior; Berg; Ramos, Natour (2004); Silva (2008); O'Sullivan, Schimitz (2010). This scale is made of 14 (fourteen) tasks categorized on a five-point ordinal scale, ranging from 0 (referencing that unable to accomplish the task) to 4 (one who performs independently). Scores of 14 (fourteen) items are combined into a total score ranging from 0 to 56 points, the higher the score the better is the performance score, and a result equal to or less than 45 points shows a decrease in the balance, which may be a predictive value of recurrent falls and consequently decreased independence and functionality<sup>(20)</sup>.

## CONCLUSION

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Therefore, it is understandable that the functional capacity has been shown to be an excellent indicator of the health condition of the older adult. However, there is no standard protocol for the functional evaluation. Before the characterization of the analyzed publications, we consider that the articles in the health area that point out the Functionality in Older Adults in everyday activities demonstrate a field not yet saturated.

Functional capacity arises, therefore, as a new paradigm of health, particularly relevant to the determination of the quality of life of the older adult. However, in view of the conditions of health, work and quality of life, studies on the older adult in its socio-interactional context are poorly explored. Considering this fact, it is suggested to health professionals to prioritize research involving this theme in several regions of the country to contribute to the diversification of the population studied, as well as in interdisciplinary studies, as they are compelling in this theme since the aging process is multisystemic. Studies on the functional capacity for feeding, for example, are rare; however, they also need to have a more specific focus, since they contributes to the quality of life of older adults.

Also, it is highlighted the need for studies in higher strata (A1 and A2) for a greater strengthening of dissemination of knowledge on the subject.

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