



EVALUATION OF THE FUNCTIONAL CAPACITY OF THE ELDERLY REGISTERED AT A FAMILY HEALTH STRATEGY

AVALIAÇÃO DA CAPACIDADE FUNCIONAL DE IDOSOS CADASTRADOS EM UMA ESTRATÉGIA SAÚDE DA FAMÍLIA

EVALUACIÓN DE LA CAPACIDAD FUNCIONAL DE ANCIANOS REGISTRADOS EN UNA ESTRATEGIA DE SALUD FAMILIAR

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ABSTRACT

Objective: to evaluate the functional capacity of the elderly. **Method:** descriptive, cross-sectional study, with quantitative approach, with 46 elders at a Family Health Strategy/FHS. The data were collected through the Katz, Lawton and Mini-Mental Scales, then recorded in the form of a database, using the SPSS™ program, version 18.0, presented in tables. The discussion occurred with the literature. **Results:** most elders had full capacity to perform the Activities of Daily Living without help, and for Instrumental Activities of Daily Living, the majority 26 (76.1%) presented various levels of dependency, requiring partial or total help. Only 10 (21.7%) were able to perform the activities without assistance. **Conclusion:** most elders had their functional capacity preserved for the development of Basic Activities of Daily Living and had higher rates of functional disability related to the Instrumental Activities of Daily Life. **Descriptors:** Frail Elder; Comprehensive Health Care; Geriatrics.

RESUMO

Objetivo: avaliar a capacidade funcional dos idosos. **Método:** estudo descritivo, transversal, de abordagem quantitativa, com 46 idosos em uma Estratégia Saúde da Família/FHS. Os dados foram coletados por meio das Escalas de Katz, Lawton e do Mini-Mental, sem seguida, registrados na forma de banco de dados, mediante a utilização do programa SPSS™ versão 18.0, apresentados em tabelas. A discussão foi feita com a literatura. **Resultados:** a maioria dos idosos apresentou plena capacidade para realização das Atividades de Vida Diária sem auxílio, e quanto às Atividades instrumentais de Vida Diária, a maioria 26 (76,1%) dos idosos encontrava-se em vários níveis de dependência, necessitando de ajuda parcial ou total, somente 10 (21,7%) conseguiam realizar as atividades sem ajuda. **Conclusão:** a maioria dos idosos estava com sua capacidade funcional preservada para o desenvolvimento das Atividades Básicas da Vida Diária e apresentava maiores índices de incapacidade funcional relacionada com as Atividades Instrumentais da Vida Diária. **Descritores:** Idoso Fragilizado; Assistência Integral à Saúde; Geriatria.

RESUMEN

Objetivo: evaluar la capacidad funcional de los ancianos. **Métodos:** estudio descriptivo, transversal, con enfoque cuantitativo, con 46 ancianos en la Estrategia Salud de la Familia/FSE. Los datos fueron recolectados a través de las escalas de Katz, Lawton y Mini-Mental y, a continuación, registrados en una base de datos, utilizando el software SPSS™, versión 18.0, y presentados en las tablas. La discusión ocurrió con la literatura. **Resultados:** la mayoría de los ancianos tenía plena capacidad para realizar actividades de la vida diaria sin ayuda, y, para las actividades instrumentales de la vida diaria, la mayoría 26 (76,1%) se encontraba en diferentes grados de dependencia, lo que exige ayuda parcial o total. Solamente 10 (21,7%) podrían llevar a cabo las actividades sin ayuda. **Conclusión:** la mayoría de los ancianos tenía su capacidad funcional conservada para el desarrollo de las actividades básicas de la vida diaria y tenía mayores tasas de discapacidad funcional relacionadas con las actividades instrumentales de la vida diaria. **Descriptor:** Anciano Frágil; Atención Integral de Salud; Geriatria.

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INTRODUCTION

Population aging is one of the world's most important and undeniable phenomena. According to the 2010 Census, released by the Brazilian Institute of Geography and Statistics (IBGE), this population would increase from 14.9 million in 2013 to 58.4 million in 2060. This became possible because the population changed its demographic profile: previously with high rates of mortality and fertility, and currently with low mortality and reduced fertility, which has led to a rapid aging of the population.¹

The World Health Organization (WHO) considers an individual as elder when aged over 60 years, with 65 years old for developed countries and 60 years old for developing countries, as in Brazil.² This segment of the population, due to the aging process itself, presents a greater vulnerability and, consequently, a higher prevalence of chronic-degenerative diseases.³

The concept of health encompasses more than the absence of disease, but a state of complete physical, mental, and social well-being.⁴ Thus, the health of the elder is the individual's ability to be independent and autonomous to perform daily tasks.⁵ This new health paradigm requires holistic attention to individuals.

In Brazil, the Family Health Strategies/FHS, as a model of the public health system, represent an instrument for reorganizing and restructuring health services, acquiring a primary role in the care of the elder.⁶ Thus, the evaluation of the elderly at the FHS should consider not only the diagnosis of the diseases, but also their functionality that covers physical and mental health, socioeconomic conditions and self-care capacity, which will demonstrate the degree of functional independence of the elder. Finally, evaluating the functional capacity of the elderly is indispensable to choose the best type of intervention and monitoring of their clinical-functional status at the FHS.⁷

Functional capacity can be defined as the potential presented by the elderly to act autonomously and independently in their daily lives.⁸ It comprises two types of activities: Basic Activities of Daily Living (BADL) and Instrumental Activities of Daily Living (IADL), postulated, respectively, by the works of Mahoney; Barthel and Lawton and Brody. These authors created two functional evaluation instruments that classified everyday activities according to their level of complexity. The scale for assessing IADL consists of eight activities: preparing meals,

doing household chores, washing clothes, handling money, using the telephone, taking medications, shopping, and using transportation.⁹⁻¹⁰

The instrument used to evaluate the BADLs was constructed in 1963 by Sidney Katz and comprises five activities and a function that hierarchically relate and reflect the patterns of child development: loss of the function of the elder begins with more complex activities, such as dressing, until self-regulation, such as feeding and those of elimination or excretion. Thus, functional decline and loss of ability to perform activities of daily living in elderly patients obey the same pattern of evolution, that is, firstly, the person loses the ability to bathe and then to dress, to move from the chair to the bed (and vice versa) and to feed. Recovery takes place in reverse order.¹¹

Autonomy and independence in the activities of daily living depend on the proper and harmonious functioning of cognition, mood, mobility and communication, and that impairment of functionality may compromise these functions, and may, thus, cause large geriatric syndromes. Furthermore, the loss of function predicts hospitalization and institutionalization, which compromise autonomy and independence and greatly influence the quality of life of the elderly.¹² In this context, this study sought to evaluate the functional capacity of the elderly.

METHOD

This is a descriptive, cross-sectional study, with quantitative approach, carried out at an FHS located in a municipality located in the north of Minas Gerais, Brazil. Initially, authorization was requested from the municipal manager of the Family Health Strategy to carry out the research, and, later, the coordinator of the team was contacted. According to information collected at the closing of the Primary Care Information System (SIAB) at the time of data collection, in this area of coverage, 1012 families were registered, which corresponded to 3,989 people, being 198 elderly people, that is, 5% of that population were elders.

Descriptive studies usually calculate the size of the population to be surveyed by proportion, given by the frequency of a particular event or by the prevalence of a particular disease that one wants to study. This study considered the proportion of 50% that corresponds to the number of elders with some type of limitation or physical disability, according to data already known in the literature. The margin of error considered was 5%, taking into account the 95% confidence

coefficient, accuracy required for the 10% estimate and 20% losses. The result of the calculation of the sample size was 70 elders.

The registered population was identified through the list of names and addresses provided by the Community Health Agents from the FHS. The names were organized in alphabetical order and numbered from one to 198, and, by means of a simple draw without replacement, using a table of random numbers, generated in the "*random numbers*" item in a spreadsheet (Microsoft Excel for Windows 95, version 7.0, Microsoft Inc., Redmond, WA). The elderly were randomly selected using a simple random probabilistic sample, so that each person in the study population had the same probability of being included.

Inclusion criteria were: being 60 years old or older, man or woman, being able to respond to the instruments, being at home in up to three attempts, being enrolled in the Family Health Strategy during the collection period, and accepting to participate in the survey. There was exclusion of elders who were bedridden, were not at home until the third attempt and did not agree to participate in the study.

The data were collected in the period from March to April 2010, by the researchers themselves, at home level, by prior appointment, with an average of eight visits per day, which lasted approximately 30 minutes each. In order to know the social, economic, demographic and health profile of the elderly, a questionnaire elaborated by the authors was applied. In order to evaluate the activities of daily living, instruments validated by the Brazilian Ministry of Health were used, such as the Katz Scale for the evaluation of BADLs and the Lawton Scale for the assessment of Instrumental Activities of Daily Living (IADLs). The Mini Mental State Examination (MMSE) was used to assess the cognitive status of the study participants.¹³

The Mini Mental State Examination (MMSE) consists of 30 questions that obtain values of the domains of temporal, spatial orientation, immediate and recall memory, calculation, language-naming, repetition, comprehension, writing and drawing copy, being the largest values in the test score indicative of better cognitive performance, on a scale ranging

from 0 to 30 points. It is one of the few tests validated and adapted for the Brazilian population, it is not useful for diagnosis, it indicates which functions deserve better investigation.¹³

Data were collected using the Katz, Lawton and Mini Mental State Examination Scales, and were subsequently recorded in the form of a database using the IBM SPSS™ (Statistical Package for Social Sciences) version 18.0, through which descriptive statistical analyses were applied, using the distribution of absolute and relative frequencies for categorical variables and mean and standard deviation (SD) for continuous variables.

The study adopted the ethical precepts according to Resolution #466 of December 12, 2012, of the National Health Council (CNS), which regulates researches involving human beings and was approved by the Research Ethics Committee (CEP) of FUNORTE, obtaining a consolidated opinion #0563/09. All participants signed an informed consent form.¹⁴

RESULTS AND DISCUSSION

Among the 70 elders registered in the FHS, five did not agree to participate in the study, five were bedridden and 14 were not at home until the third attempt at different days and times. Thus, 46 elders participated in the study: 16 (35%) men and 30 (65%) women, with a higher frequency of elderly individuals between 60 and 69 years old in both genders, with mean age of 69.89 (SD=6.63), that is, the majority of the study population consists of young elders.

The investigated elders were predominantly female, justified by the existence of differential mortality between the genders and younger age groups.¹⁵ A study with elderly subjects found a similar result for the mean age.¹⁶

Regarding education, the surveyed elders had little access to school, since the majority (52.2%) only attended primary school, followed by illiterates (47.8%), with no significant differences between men and women. This sociodemographic data is relevant, since the elderly with lower educational level are five times more likely to have moderate/severe dependence.¹⁷ Table 1 described the sociodemographic data.

Table 1. Sociodemographic variables per gender of the elderly. Montes Claros (MG), Brazil, 2011.

Variable	Gedner				Total	
	Male		Female			
	n	%	n	%	n	%
Marital Status						
Single	1	2.2%	0	0.0%	1	2.2%
Married / Living together	12	26.1%	13	28.3%	25	54.3%
Widow(er)	3	6.5%	17	37.0%	20	43.5%
Education						
Illiterate	9	19.6%	15	32.6%	24	52.2%
Literate	7	15.2%	15	32.6%	22	47.8%
Income						
Up to 1 minimum wage	12	26.1%	23	50.0%	35	76.1%
1 - 2 wages	2	4.3%	3	6.5%	5	10.9%
3 - 4 wages	1	2.2%	1	2.2%	2	4.3%
4 - 5 wages	0	0.0%	0	0.0%	0	0.0%
More than 5 wages	1	2.2%	0	0.0%	1	2.2%
No income	0	0.0%	3	6.5%	3	6.5%
Lives with						
Alone	1	2.2%	4	8.7%	5	10.9%
Spouse / companion	3	6.5%	2	4.3%	5	10.9%
With children	2	4.3%	5	10.9%	7	15.2%
With spouse and children	4	8.7%	3	6.5%	7	15.2%
With grandchildren	0	0.0%	1	2.2%	1	2.2%
With children and grandchildren	1	2.2%	8	17.4%	9	19.6%
With spouse, children and grandchildren	5	10.9%	7	15.2%	12	26.1%

Regarding the person who lives with the elder, the majority (63.1%) of the elderly live with their spouses and/or their children, a fact that indicates a family support network that is one of the fundamental aspects in the healthcare to this population group, thus contributing to their well-being. The family arrangement increases the chance of the elder’s dependency. However, studies indicate that living alone can mean a motivation to maintain the ability to perform activities of daily living, due to the inexistence of a companion to help.¹⁸

The evaluation of the functionality is important as indicative of the elder’s quality of life. The performance of activities of daily living is considered an acceptable and lithy criterion to establish this evaluation, being used by health professionals, and quite effective for nurses to evaluate degrees of dependence of their clients.¹⁹

Independence relates to exercised functions without supervision, direction or help, and this evaluation bases on the actual

situation and not on the individual's capacity. When a person fails to perform a function, it is considered not performed by him/her, although he/she may have the capacity to do so. The degrees considered for functional independence or dependence are progressive and range from total independency for all functions (grade A) to total dependency to perform the six evaluated functions (grade G).¹⁹ The results in Table 2 show that 85% of the elderly had full capacity to perform the BADLs without assistance, followed by 13% that presented incapacity for only one basic activity. Most elders were in the situation of independence, that is, 86.8% of the interviewees were able to carry out all the activities without any assistance.¹⁸ Greater longevity accompanied by a better quality of life allows inferring that the prevalence of more active independent elderly people is increasing.²⁰

Table 2. Description of the dependency degree of the Basic Activities of Daily Living. Montes Claros (MG), Brazil, 2011.

Classification	Male		Female		Total	
	n	%	n	%	n	%
A - Independent for all activities.	14	30.0%	25	55.0%	39	85.0%
B - Independent for all activities less one.	1	2.0%	5	11.0%	6	13.0%
Outro - Dependent in at least two functions, but not classified as C, D, E e F.	0	0.0%	1	2.0%	1	2.0%

Regarding self-care activities or basic activities, the inability to control urination and/or evacuation functions had the highest

prevalence (13%), followed by bathing (2.2%) and transference (2.2%). A population-based study in Lafaita Coutinho-BA found a higher

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frequency of urinary incontinence in BADL.²¹ The data found are significant, since the constraint caused by urinary incontinence generates impacts on the quality of life of the elder and can cause social isolation, changes in self-esteem and self-image, in sexuality, compromising the instrumental activities of daily living.^{5,22}

The impairment of sphincter control, alone, may not constitute a higher degree of dependence, because it is a function, not an activity. It is worth mentioning that this function is erroneously seen as a natural process of population¹² aging and, although it is frequent among the elderly and affects their functionality, it is almost always omitted in the clinical examination, when in fact, it should be readily identified, requesting to the patient to minutely describe his/her urination, focusing on the presence of urinary urgency and nocturia.⁵

The diagnosis of urinary incontinence should follow a thorough investigation of the most likely causes. Assistance to the incontinent person should be performed

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through behavioral changes and exercises aimed at strengthening the urethral sphincter.⁵ When individuals are unable to perform basic care tasks, they become dependent on caregivers.

With regard to IADLs, the majority (78.3%) of the elderly were in various levels of dependence, requiring partial or total help, and only 21.7% were able to perform the activities without help. These data are similar to another study, in which 27.4% were independent, 68.4% were partially dependent, and 4.2% were totally dependent.²² Another study performed at a FHS found that most elders were independent (66.9%).²³

Regarding IADLs, the most frequent deficits in the surveyed sample were using the telephone, tidying up the house and performing household activities, respectively, and the elderly needed total help or failed to perform these activities. The majority presented independence to prepare meals, shop and take their medications, as shown in Table 3.

Table 3. Description of the depence degree for the Instrumental Activities of Daily Living of the elderly. Montes Claros (MG), Brazil, 2011.

Instrumental Activities	Independent		Need partial help		Need total help or fail to perform them	
	n	%	n	%	n	%
Using the telefone	22	47.8%	13	28.3%	11	23.9%
Using transportation	33	72.0%	12	26.0%	1	2.0%
Shopping	39	84.0%	4	9.0%	3	7.0%
Preparing meals	44	96.0%	1	2.0%	1	2.0%
Can tyde the house	28	60.0%	9	20.0%	9	20.0%
Performing household chores	35	76.0%	4	9.0%	7	15.0%
Washing and ironing	35	76.0%	9	20.0%	2	4.0%
Taking their medications	42	81.0%	8	17.0%	1	2.0%
Controlling the finances	35	76.0%	10	22.0%	1	2.0%

The studies are quite diversified as to the type of activity in which the elderly are more dependent. The greatest reported disability was for washing and ironing.^{3,22} The results of the present study regarding the use of the telephone were similar to the findings of other national research, and the greater dependence to use this device among the elderly, is possibly due to their low level of education.²¹

Failure to perform one of these activities, in addition to impairing the social life of the elderly, potentially causes disruption to the elderly and their families, which, depending on the activity, will have to mobilize more available time, energy and financial resources to support the installed needs.²²

When comparing the information on the performance of BADL and IADL, women had a higher rate of difficulties when compared to men. A study that evaluated the functional capacity of the elderly attended by the Family Health Program in Goiânia found female prevalence in some type of difficulty.²⁴ This finding is also similar to those of other studies, in which female subjects presented greater impairment of functional capacity.¹⁸ A probable affirmation for this result is the greater female longevity, and, consequently, greater risk of developing disabling chronic diseases. Dependence on IADLs is more frequent in women; however, a better quality of life do not accompany the greater longevity among women.²⁵

The MMSE includes questions that correlate in five dimensions, namely: concentration, language/praxis, orientation, memory and attention, with a maximum score of 30 points. Although the clinical practice commonly uses the 23/24 cutoff point for the detection of cognitive impairment and dementia, education influences the MMSE performance, and other cutoff points have been recommended in Brazil for populations with low educational attainment; there is no consensus as to the best cut-off point for this population.²⁶ Nevertheless, for the MMSE results, the suggested cut-offs are: Illiterates = 19.1, three years of schooling = 23.4, seven years of schooling = 24 and seven years of schooling = 28, being the total score = 30 points adopted in the present study.²⁷

Thus, after analyzing the data obtained with the application of the MMSE in the studied population, the literate elderly achieved better results in the test, presenting scores in the MMSE above 21 points (lowest score = 16 and highest score = 28).

The results found in the present study are consistent with the researched literature, since there was a relation between poorer schooling and low MMSE scores when comparing illiterate to literate elders.²⁸⁻²⁹

A multicenter study has shown a significant reduction of cognitive decline with increased schooling. However, there is evidence that greater schooling, insertion in more complex work activities and leisure that involves cognitive process associate with the construction and maintenance of the cognitive reserve, suggesting that active aging can minimize the cognitive decline, and may represent a viable strategy for the promotion of mental health among the elderly.²⁸ A study that aimed to evaluate the presence of depression and functional capacity in the elderly found that the elderly with partial or total dependence in daily activities were more susceptible to develop depressive symptoms when compared to independent elders.³⁰

CONCLUSION

Most of the surveyed elderly had their functional capacity preserved for the development of the Basic Activities of Daily Living. Moreover, the higher prevalence of functional disability related to the Instrumental Activities of Daily Living, demonstrating that, according to the literature, the elderly are losing the skills to develop the most complex activities.

The results also showed that women presented a higher rate of difficulties than

men to perform activities of daily living, indicating that they are more vulnerable to declines in functional performance. The importance of using the MMSE associated with the Katz and Lawton Scale in the evaluation of the functional capacity of the elderly also stood out, thus showing the importance of the relationship between cognitive assessment and functional capacity.

The Mental State Examination showed that literate elders achieved better test results when compared to illiterate elders, which implies rethinking strategies for insertion of the elderly into more complex work and leisure activities involving a cognitive process associated with the construction and maintenance of their cognitive reserve.

This study ratifies the importance of evaluating the functional capacity of the elderly, since this is a new health marker for this age group and has become a great challenge to overcome, since life expectancy has increased, leading to the consequent growth of elders with functional disability. In this sense, the evaluation of the functional capacity of the elderly becomes a fundamental element to establish an adequate diagnosis, prognosis and clinical judgment, in the support of decisions about the necessary treatments and care, especially in relation to programs that provide promotion, treatment and rehabilitation of functional capacity.

Therefore, the evaluation of the functional capacity of the elderly is an important indicator for the professionals of the FHS to plan their actions, in order to prevent or postpone the functional deficits, in this population group, guaranteeing to them independence, autonomy and, consequently, better quality of life.

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