

## Family health strategy: relevance to the functional capacity of older people

*Estratégia saúde da família: relevância para a capacidade funcional de idosos*  
*Estrategia salud de la familia: relevancia para la capacidad funcional de los ancianos*

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### ABSTRACT

**Objective:** to identify the functional capacity of older people based on their performance on basic activities of daily living. **Method:** a cross-sectional study, carried out through the record of the Family Health teams working in the urban area of a city in northern Minas Gerais, in 2015. To assess the functional capacity of 373 older people, the Katz Scale was applied, which includes dimensions on the performance of daily living activities. The interviews took place in the participants' households. **Results:** of the total participants, 6.9% had some degree of dependence. Those aged over 80 years old and were living without a partner had about three times more chances of presenting higher levels of functional dependence. **Conclusion:** most older people enrolled in a Family Health Strategy had their functional capacity preserved.

**Descriptors:** Older Adult's Health; Geriatric Nursing; Primary Health Care; Family Health Strategy; Everyday Activities.

### RESUMO

**Objetivo:** identificar a capacidade funcional de idosos com base no desempenho para as atividades básicas de vida diária. **Método:** estudo de delineamento transversal, realizado por meio dos registros de equipes de Saúde da Família que atuam na área urbana de uma cidade do Norte de Minas Gerais, no ano de 2015. Para avaliar a capacidade funcional de 373 idosos aplicou-se a Escala de Katz, que contempla dimensões sobre a realização de atividades da vida diária. As entrevistas ocorreram nos domicílios dos participantes. **Resultados:** do total de idosos, 6,9% possuíam algum grau de dependência. Aqueles com idades acima de 80 anos e que viviam sem companheiro(a) tiveram, aproximadamente, o triplo de chances de apresentar níveis mais elevados de dependência funcional. **Conclusão:** os idosos cadastrados em uma equipe da Estratégia de Saúde da Família possuíam, em sua maioria, capacidade funcional preservada.

**Descritores:** Saúde do Idoso; Enfermagem Geriátrica; Atenção Primária à Saúde; Estratégia Saúde da Família; Atividades Cotidianas.

### RESUMEN

**Objetivo:** identificar la capacidad funcional de los ancianos con base en el desempeño para las actividades básicas de la vida diaria. **Método:** el estudio de delineamiento transversal, realizado por medio de los registros de equipos de Salud de la Familia que actúan en el área urbana de una ciudad del Norte de Minas Gerais, en el año de 2015. Para evaluar la capacidad funcional de 373 ancianos se aplicó la Escala de Katz, que contempla dimensiones sobre la realización de actividades de la vida diaria. Las encuestas ocurrieron en los domicilios de los participantes. **Resultados:** Del total de ancianos, el 6,9% poseían algún grado de dependencia. Aquellos con edades arriba de 80 años y que vivían sin compañero(a) tuvieron, aproximadamente, el triplo de

chances de apresentar níveis más elevados de dependência funcional. **Conclusión:** Los ancianos registrados en un equipo de la Estrategia de Salud de la Familia poseían, en su gran parte, la capacidad funcional preservada.

**Descripciones:** Salud del Anciano; Enfermería Geriátrica; Atención Primaria a la Salud; Estrategia Salud de la Familia; Actividades Cotidianas.

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## INTRODUCTION

Population aging is a worldwide phenomenon. Brazil currently has a significant percentage of older people, which will continue growing in the coming years<sup>(1)</sup>. The life expectation, which in the last census was 69.8 years, may reach a mean of 81.2 years in 2050<sup>(2)</sup>, as a result of changes in demographics, epidemiological profile, and socio-economic characteristics, as well as of advances and discoveries in the biotechnological science<sup>(3)</sup>. This new context causes an increase in health-related expenses in old age, as well as a growing need for care and assistance to people in this age group<sup>(4)</sup>.

The aging process enhances the risk of chronic non-communicable diseases, which can progressively affect the functionality of people as the age increases. Such conditions, in turn, can lead to a situation of functional incapacity and/or to dependence for the performance of basic activities of daily living (ADL) such as bathing, dressing, feeding, and moving from the bed to a chair<sup>(5-6)</sup>.

In Brazil, the high prevalence of functional incapacity among older people<sup>(7)</sup> is characterized by a process of losing skills to maintain day-to-day tasks. It is determined by a complex network of factors that includes socio-demographic characteristics, health conditions, and behavioral aspects<sup>(8)</sup>. The decreasing functional capacity of older people is one of the greatest health problems for this public and demands a coordinated health care network to promote a healthy aging<sup>(4)</sup>.

Functional decline starts in more complex activities and progresses hierarchically until it reaches the complete dependence level. Such deterioration of the main functional systems can lead to impacting geriatric syndromes, such as postural instability, immobility, incontinence, and communicative disabilities<sup>(9)</sup>.

Dependence of older people is a condition that must be avoided or postponed, as it is function of health teams, specially of the Primary Care<sup>(10)</sup>. The Family Health Strategy (FHS), considering the principles that guide it and its focus on promoting quality of life, constitutes a privileged space for integral care to older people's health<sup>(11)</sup>. For an active aging and the maintenance of older people's independence, it becomes urgent the evaluation of their functionality<sup>(12-13)</sup> in the practice of Primary Health Care teams, in different regions of the country.

Thus, it is crucial to investigate the health situation of older adults registered in Health Family Strategy (FHS) teams. In this case, this assessment will be carried out in a municipality of Minas Gerais.

## OBJECTIVE

This study aims to assess the functional capacity of older adults, inhabitants in a municipality of Minas Gerais, based on their performance in basic activities of daily living.

## METHOD

### Ethical aspects

This study project was approved by the Research Ethics Committee (REC) of the Universidade Estadual de Montes Claros.

### Study design, location and period

Quantitative cross-sectional study, developed in the context of a Family Health Strategy team of the urban area in the municipality of Taiobeiras, northern Minas Gerais. This is a small municipality, with Gini index of 0.51, a value which is inferior to the overall score of the country (0.60); the Minas Gerais State (0.63); the State capital, Belo Horizonte (0.61); and to that of the biggest city of the macro-region, Montes Claros (0.53). This shows a better income distribution in the city investigated. Taiobeiras has 30,917 inhabitants. Infant mortality in this municipality decreased from 23.1 deaths per thousand live births, in 2000, to 17.1 deaths per thousand live births in 2010. Between 2000 and 2010, the activity rate of the population over 18 years old rose from 64.36% to 67.56%. At the same time, the inactivity rate decreased from 11.58% in 2000 to 4.80% in 2010. In 2010, 99.6% of the population had access to a basic sanitation network<sup>(14)</sup>.

### Population or sample; inclusion and exclusion criteria

In 2015, Taiobeiras features 100.0% coverage by Family Health teams, amounting to a total of 13 multidisciplinary teams. The team that presented the highest proportion of assisted older adults was selected for this study.

As inclusion criterion, the older people should reside in the area of action of the FHS team. Those who were not located in their homes after three visits on different days and times were not included in the sample.

### Study protocol

Data were collected by a nursing scholar, trained for such work, from March to June 2015. The collection was performed in a reserved ambient, at the own participants' households. Interviews were scheduled in the most convenient days and times for the participants. An instrument was used, which comprised the following socio-demographic variables: sex, marital status, family arrangement, age, educational level, income, and ethnicity. For functional evaluation, the validated Katz Scale was used<sup>(15)</sup>, which was developed exactly to assess treatment results in older people and predict the prognosis in chronic patients.

The Scale included six items, hierarchically related, that reflected the loss of function in older adults concerning their daily living activities: "bathing", "dressing", "using the toilet",

“moving from one place to another”, “continence”, and “feeding”. For each item, the participant was classified as dependent or independent, being assigned to each item zero or one point, respectively. For a categorization of functionality, these points were summed for each function. Then, they were classified into: important dependence - from zero to two points; partial dependence - from three to four points; and independence - from five to six points.

Dependence was also evaluated for each of the six functions individually, according to the different degrees of functional independence: 0 - independent in all six functions; 1 - independent in five functions and dependent in one; 2 - independent in four functions and dependent in two; 3 - independent in three functions and dependent in three; 4 - independent in two functions and dependent in four; 5 - independent in one function and dependent in five; and 6 - dependent in all six functions<sup>(16)</sup>.

**Results analysis and statistics**

The descriptive analysis of data was performed with absolute and relative frequency. For association analysis, the variables were categorized into: functional dependence - dependent and independent older adults (important and partial dependence); marital status - living with a partner (married and stable relationship) or living without a partner (single, widowed, and divorced); age - ≥80 and < 80 years old; educational status - literacy (some educational level) and illiteracy; income - smaller or greater than a minimum wage; and ethnicity - white and nonwhite (mixed race, black, yellow). Bivariate analysis was conducted through the chi-square test, in which the independent variables associated with the functional capacity of the older population up to a 20% significance level (p ≤ 0,20) were inserted into the multiple analysis. In the final adjusted model, estimated by Logistic Regression, remained the variables that presented a significance level up to 5% (p ≤ 0,05). Odds ratios (crude and adjusted) were estimated, with their respective 95% confidence intervals. Statistical processing was performed using the software *Predictive Analytics SoftWare* (PASW®) version 18.0, or 19.0 for Windows.

**RESULTS**

373 older adults registered in an FHS of Taiobeiras participated in the study. There was a loss of 3% of the sample at the end of the study. In the studied group, there was a predominance of women (59.2%), over the age of 70 (56.6%), and nonwhite (69.4%). About half the participants were illiterate (50.1%), married or in a stable relationship (52.3%), and had a monthly household income inferior to one minimum wage (47.2%). Concerning family arrangement, 14.2% of the participants lived alone.

It was observed that 6.9% (n=26) presented some degree of dependence, being 5.6% partial and 1.3% important. When determining the independence level of the older adults in performing daily living activities by themselves, it was noted that most of them were independent to bathe (94.9%), dress (94.6%), and use the toilet (96.5%). Regarding the ability to move from one place to another, 3.8% were dependent. 2.9% of the older adults were suffering from incontinence, and 0.3% depended on someone to feed them.

Concerning the diverse levels of functional independence, 92.2% were independent in all six functions (bathing, dressing, using the toilet, moving, continence, and feeding), 7.4% had at least one dependence, and 0.3% were dependent in all functions.

In the bivariate analysis of association, sex was statistically significant (limitrophe) with functional capacity since most dependent participants were women (76.9%). Those who were living with a partner (69.2%) presented significant association (p=0.023) with the dependent functional status. It was also identified a relationship between educational level and older adult dependence, as 73.1% of the dependent ones were illiterate (p=0.015). Regarding age, 81.0% of the interviewees under 80 years old were independent, thus showing that age is significantly associated with ADL performance capacity (p<0.001). The multiple analysis showed that older adults without partners and older than 80 had 2.809 (IC95% = 1.15-6.89) and 3.317 (IC95% = 1.43-7.69) times more chances of presenting functional dependence, respectively (Table 1).

**Table 1 –** Analysis of the association between socio-demographic variables and the dependence of the older people registered in an family health strategy team of Taiobeiras, Minas Gerais, Brazil, 2015

Variables	Dependence				OR <sub>crude</sub> (CI 95%)	p value	OR <sub>adjusted</sub>	p value*
	Yes		No					
	n	%	n	%				
Sex								
Male	06	23.1	146	42.1	1			
Female	20	76.9	201	57.9	2.421 (0.95-6.18)	0.057		
Marital status								
Living with a partner	8	30.8	187	53.9	1	0.027	1	0.024
Living without a partner	18	69.2	160	46.1	2.630 (1.11-6.21)		2.809 (1.15-6.89)	
Family arrangement								
Living alone	01	3.8	52	15.0	1	0.117		
Lives with family/caregiver	25	96.2	295	85.0	4.407 (0.58-33.23)			

To be continued

Table 1 (concluded)

Variables	Dependence				OR <sub>crude</sub> (CI 95%)	p value	OR <sub>adjusted</sub>	p value*
	Yes		No					
	n	%	n	%				
Age								
< 80	13	50.0	281	81.0	1	<0.001	1	0.005
≥ 80	13	50.0	66	19.0	4.258 (1.89-9.61)		3.317 (1.43-7.69)	
Literacy								
Yes	07	26.9	179	51.6	1	0.020		
No	19	73.1	168	48.4	2.892 (1.19-7.06)			
Income								
> 1 MW	16	61.5	181	52.2	1	0.358		
1 MW	10	38.5	166	47.8	1.467 (0.65-3.32)			
Ethnicity								
White	07	26.9	107	30.8	1	0.677		
Nonwhite	19	73.1	240	69.2	1.210 (0.49-2.97)			

Note: \*Adjusted by family arrangement. MW: current minimum wage (R\$ 937.00); OR: odds ratio; CI95%: confidence interval of 95%.

## DISCUSSION

Considering the population aging in Brazil, the knowledge on the functional capacity of older adults is necessary to establish proper guidelines regarding the health of this population. The Brazilian Institute of Geography and Statistics (IBGE) estimated for 2030 a percentage of 13.4% of individuals with 65 years of age or more in the Brazilian population. In Brazil, in 2017, it is estimated that 13.4% of the population is 60 or older and, in Minas Gerais, the percentage is 13.9%<sup>(2)</sup>. The proportion of older adults in the city of Taiobeiras, according to the last census<sup>(14)</sup>, reached 11.1%.

Regional data collection on the functional capacity of older adults is relevant, considering the health inequalities in the country. In this perspective, this study evaluated the functional capacity of older adults registered in an FHS team of Taiobeiras and found that most of them were independent in ADL performance.

In Portugal, a study conducted with 1,518 older adults also observed that most did not present any difficulty to perform activities of their daily routines<sup>(17)</sup>. In Brazil, similar results were found in Rio Grande do Sul, in the municipalities of Independência<sup>(18)</sup> and Porto Alegre<sup>(19)</sup>, and in the State of Minas Gerais, in the city of Uberaba<sup>(20-21)</sup>. The ten-year analysis (1998-2008) on the health conditions of Brazilian older adults did not show any changes in the prevalence of functional capacity, a stability observed in several regions of the country, as well as in the various older age groups<sup>(22)</sup>. This reiterates the need to assess these conditions aiming to improve such values, considering the progressive increase in the life expectancy of the Brazilian population.

The performance of everyday activities by older adults contributes to preserving their functional capacity<sup>(18)</sup>. When observing the independence level for ADL, this study verified that most older people had no difficulties in performing them, which can favor a better self-esteem, preservation of personal well-being, and greater social interaction<sup>(13)</sup>.

Regarding the diverse degrees of functional independence, most participants were completely independent in all six functions: bathing, dressing, using the toilet, moving, continence,

and feeding. These results are superior to that found in a study conducted with institutionalized older adults of Itaúna (MG), in which 23% of the sample was dependent in all functions<sup>(6)</sup>, what emphasizes the importance for the older adults in remaining within their families and communities.

Still analyzing the independence in individually performing the ADL, the majority of older people preserved most of the functions. However, there were several older adults with incontinence that needs to be considered. Even though, this result shows a better situation than the one presented by the older people registered in the FHS of a municipality in the southern region of Brazil<sup>(23)</sup>. Overall, this condition may be related to changes inherent to the aging process, such as decreased bladder capacity, the emergence of chronic non-communicable diseases, and accumulation of abdominal fat<sup>(23)</sup>. This framework can affect the quality of life, as it causes an embarrassment that can induce the older adult to social insulation<sup>(24)</sup>.

Dependence in at least one ADL function, among participants of this research, was inferior to that found in the northeastern<sup>(25)</sup> and southern<sup>(12)</sup> regions of the country. In the analysis on the functional capacity of older adults registered in an FHS team in the municipality of Montes Claros, MG, it was observed that 6.6% were dependent in up to three ADL functions<sup>(26)</sup>.

In the bivariate analysis regarding functional capacity, in turn, this study found associations with sex (limitrophe), educational level, marital status, and age. Most dependent older people were women, which is in line with the international<sup>(27)</sup> and national<sup>(7,28)</sup> results. Functional incapacity prevalence in Brazilian older adults is high, especially among women<sup>(7)</sup>. The data obtained in this study are consistent to those reported in a research conducted with older adults in Basic Health Units of the municipality of Guarapuava (PR), in which women showed higher functional dependence than men, both in moderate or severe dependence<sup>(28)</sup>. The prevalence of functional incapacity in older women ranges from 14.9% to 84.6%. Such result can be explained by the feminization of aging, considering that longevity not necessarily implies in quality of life or desired health conditions<sup>(18)</sup>.

In this study, educational level influenced in the dependence level of older adults, as most of the dependent ones are illiterate. Illiteracy makes it difficult to carry out activities such as taking medication on their own, buying food, dealing with money or even using a phone, which, in turn, enhances the dependence level in this phase of the life cycle<sup>(6)</sup>. However, it should be emphasized that the variables sex and educational level were insignificant in the multiple analysis.

In the final model, variables marital status and age remained attached to the functional capacity of older adults, adjusted by family arrangement. These characteristics were also observed in an international study<sup>(27)</sup>. Dependence in ADLs was associated to the fact of living without a partner and, in this sense, living alone contributes both to a decline in the quality of life as to the aggravation of morbidities, functioning as an indicator of mortality risk<sup>(7)</sup>.

It was observed the independent older adults were, in the majority, in the age group with less than 80 years old. Age advance can contribute to the impairment of functional capacity<sup>(29-32)</sup>. This condition can be partially explained by the fact of increased age is associated with a high prevalence of chronic non-communicable diseases, cognitive losses, sensory decline, accidents, and social insulation<sup>(33)</sup>. Such finding is consistent with a study on the conditions of older adults registered in FHS teams in the city of Pedra de Maria da Cruz, northern Minas Gerais, where a relevant impairment of functional capacity was observed with the increasing age<sup>(31)</sup>.

Independence in performing ADLs is important in the stage of the life cycle and involves emotional, physical, social, and economic issues<sup>(12,29,34)</sup>. The ability to perform basic activities of the routine contributes both to a healthy and active aging of this population<sup>(17)</sup> as to an improvement in the quality of life<sup>(35)</sup>.

In addition, the high number of independent older adults found in this study should be analyzed considering the social and health contexts of Taiobeiras, which presents lower levels of social inequality in comparison with other cities in Minas Gerais, full coverage of the population by the FHS, and the fact that the municipality is the headquarters in the micro-region of the Master Plan of Regionalization in Minas. Furthermore, this municipality is the regional center of professional training in medical and multi-professional residency in Family Health and in Family and Community Medicine.

Considering the increase in the older population and its demands, specific health policies and long-term care are required to assist the formulation of preventive and early intervention measures, aiming to improve the quality of life of older adults<sup>(34-36)</sup>. In this sense, health services, especially FHS

teams, must act in the prevention of older people incapacity, emphasizing the nurse role<sup>(12,18)</sup>. An evaluation of older people in FHS should emphasize functionality, as the presence of functional decline may suggest diseases or changes not yet diagnosed<sup>(10)</sup>.

Nursing assistance in FHS should be committed to the integral care of the older adults and their families, and assume a protagonist role in the functional decline assessment<sup>(37)</sup>. Given this scenario, it is possible to develop actions to promote healthy living; prevention and/or compensation of limitations and incapacity; specific treatment and care; and facilitation of the health-care process, to promote older people's autonomy<sup>(11,38)</sup>.

### Study limitations

A limitation of this study is its cross-sectional design, which makes impossible to establish a causal relation. Moreover, the data cannot be generalized since they deal with the reality of older adults enrolled in an FHS team of the urban area of a small municipality in northern Minas Gerais, which has a peculiar socio-demographic context. It should also be considered that in local contexts, in smaller municipalities, a considerable part of the population may reside in the countryside. In Taiobeiras, the 2010 Census<sup>(15)</sup> indicates that 25.3% of the total older population reside in rural areas. With that, it is urgent to pay attention to the characteristics of this population in future studies.

### Contributions to the fields of nursing, health or public policy

This study reiterates the importance of geriatric nursing care to preserve the functionality of older adults. Strategies for promoting and protecting their health should be implemented, whereas the privileged context of FHS.

### CONCLUSION

The population of older adults enrolled in a Family Health Strategy team of the urban area in a municipality in northern Minas Gerais had, in the majority, a preserved functional capacity. Variables female sex, living without a partner, and illiteracy were associated with a dependent functional status. Age below 80 years old was related to independence in performing basic activities of daily living.

The knowledge on factors associated with the functional capacity of older adults is essential to support public policies that favor the integral health of this population and the care provided to them, aiming to preserve autonomy and promote a healthy aging.

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