

**DEGREE OF DEPENDENCE OF ELDERLY RESIDENTS IN GERIATRIC
LONG-TERM CARE FACILITIES IN MONTES CLAROS, MG^a**Lara Mota MARINHO^b, Maria Aparecida VIEIRA^c,
Simone de Melo COSTA^d, João Marcus Oliveira ANDRADE^e**ABSTRACT**

This study aimed to identify the degree of dependence of institutionalized older adults in Montes Claros, Minas Gerais, Brazil. It consists of a cross-sectional descriptive study, developed in three non-profit geriatric long-term care facilities in this municipality. The sample was comprised of 125 older adults and data were collected with the use of the Katz Index. Data were presented by descriptive and bivariate analysis. Independence was observed in 41.6% (n=52), partial dependence in 15.2% (n=19) and total dependence in 43.2% (n=54). The elderly have better ability to perform feeding (86.4%, n=108) and transferring (67.2%, n=84) activities. Thus, this study suggests the need for continuous monitoring to prevent functional disability in this population group.

Descriptors: Aged. Geriatric long-term care facilities. Frail elderly.

RESUMO

Este estudo objetivou identificar o grau de dependência dos idosos institucionalizados no município de Montes Claros, Minas Gerais, Brasil. Trata-se de um estudo transversal descritivo, realizado nas três Instituições de Longa Permanência para Idosos, de caráter filantrópico, no município de Montes Claros, Minas Gerais. Participaram todo o universo de idosos residentes nos locais do estudo, totalizando 125 sujeitos, cujos dados foram coletados por meio do Índice de Katz. Os dados foram apresentados por análise descritiva e bivariada. A independência foi observada em 41,6% (n=52), a dependência parcial em 15,2% (n=19) e a dependência total em 43,2% (n=54), sendo que os idosos apresentam melhor capacidade de execução das atividades de alimentação (86,4%; n=108) e transferência (67,2%; n=84). Assim, o presente estudo sugere a necessidade de acompanhamento contínuo na prevenção da incapacidade funcional desse grupo populacional.

Descritores: Idoso. Instituição de longa permanência para idosos. Idoso fragilizado.
Título: Grau de dependência de idosos residentes em instituições de longa permanência.

RESUMEN

Esta investigación tuvo como objetivo identificar el grado de dependencia de los ancianos institucionalizados en el municipio de Montes Claros, Minas Gerais, Brasil. Se trata de un estudio transversal y descriptivo, realizado en tres Instituciones de Larga Permanencia para Ancianos de dicho municipio. Participaron de este estudio 125 ancianos, cuyos datos fueron recolectados por medio del Índice de Katz. Los datos fueron presentados por el análisis descriptivo y bivariado. La independencia fue observada en el 41,6% (n=52), la dependencia parcial en el 15,2% (n=19) y la dependencia total en el 43,2% (n=54). Los ancianos tienen más capacidad para realizar las actividades de la alimentación (86,4%, n=108) y transferencia (67,2%, n=84). Por lo tanto, este estudio sugiere la necesidad de un acompañamiento continuo en la prevención de la incapacidad funcional de ese grupo poblacional.

Descriptores: Anciano. Hogares para ancianos. Anciano frágil.
Título: Grado de dependencia de los ancianos residentes en Instituciones de Larga Permanencia en Montes Claros, MG.

a Study originated from an undergraduate nursing end-of-course monograph, presented in 2010 at the State University of Montes Claros, Montes Claros, Minas Gerais, Brazil.

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INTRODUCTION

In the last few years, significant changes have occurred in the demographic and health standards of the world population, which resulted in an expressive growth of the elderly population. It is estimated that by 2025, Brazil will have the sixth greatest elderly population in the world, with a proportion of approximately 14%, which means, in absolute numbers, that there will be approximately 32 million older adults living in the country. The demographic growth of this differentiated and unique population group has been garnering the interest of researchers surrounding the theme of aging⁽¹⁾.

The aging concept may be defined as a set of morphologic, physiologic, biochemical and psychological changes that determine the gradual loss of ability of individuals to manage in their environment, and is considered a dynamic and progressive process⁽²⁾.

The set of physiologic and pathological changes experienced by the elderly culminates in growing dependence, which consists of a dynamic process whose evolution may be modified, and even prevented or reduced, if provided with appropriate care and environment⁽³⁾. Dependence may be also considered as a condition in which people are found due to reasons associated with the lack or loss of autonomy (physical, psychic, social), and the need for assistance to perform basic and instrumental activities of daily living. It is a serious health problem that interferes in the quality of life of the elderly and their caregivers⁽⁴⁾.

Therefore, in order to learn the degree of (in)dependence of the elderly, it is necessary to assess their functional ability, which is expressed through the performance of activities of daily living. The assessment of the functional ability is relevant and directly associated with indicators of quality of life of the elderly. The execution of activities of daily living is considered an accepted and legitimate parameter to establish this evaluation, which is used by professionals in health care to evaluate degrees of dependence in their patients. In this setting, it is possible to understand functional assessment, within a specific function, as the assessment of the ability to perform self-care and fulfill basic daily needs; that is, the execution of activities of daily living⁽⁴⁾.

In Brazil, the lack of social and health programs aimed both at the promotion of independence and the maintenance of the dependent

elderly in their homes leads, in many cases, to early hospitalization in long-term care facilities⁽⁵⁾. Some of the factors that may contribute to the institutionalization of the elderly are the absence of members constituting a family or people available to take care of older adults in situations of dependence, the increased proportion of older adults with decreased functional ability, the lack of formal social support of health services and a network of informal social supports for the elderly, as well as the high investment needed to keep the elderly in their own homes⁽⁶⁾.

Long-stay institutions for the elderly are homes that admit people aged 60 years or older, with or without family support, under conditions of freedom, dignity and citizenship. These institutions may or may not be associated with the government^(7,8).

It is believed that the institutionalization of the elderly may result in functional decline, with consequent loss of independence for the execution of basic activities of daily living⁽⁴⁻⁶⁾. In this sense, it is important to develop studies regarding the degree of dependence of older adults residing in long-term care facilities, since these results may contribute to the development of actions that will provide better quality of life for these people. Understanding the importance of the theme presented, the present study was based on the following guiding question: what is the degree of (in)dependence of the elderly institutionalized in Montes Claros, Minas Gerais, Brazil?

Hence, this study, which resulted from a monograph⁽⁹⁾, had the purpose to identify the degree of dependence of the elderly institutionalized in the city of Montes Claros, Minas Gerais, Brazil.

METHODOLOGY

This is a cross-sectional, quantitative and analytical study, developed in three non-profit long-term care facilities for the elderly, located in the city of Montes Claros, Minas Gerais, Brazil.

The study involved the participation of all older adults residing in the studied institutions, totaling 125 subjects aged 60 years or over. For data collection purposes, those who were not able to answer the questions during the interview due to cognitive or physical issues were assisted to do so by a caregiver who was directly involved with the

daily care of the older adult. The authors decided not to exclude subjects from the study, since this exclusion could compromise the results by minimizing the degree of dependence, given the fact that cognitive function directly affects functional ability.

The Katz Index was adopted to identify the degree of dependence of institutionalized older adults in terms of basic activities of daily living. This instrument was developed in the 1960's by Sidney Katz to assess the degree of dependence in basic and instrumental activities of daily living, based on whether the subjects are independent or require assistance to execute these activities⁽¹⁰⁾. In Brazil, it has been widely used and its cross-cultural adaptation was developed by Lino et al.⁽¹¹⁾.

The Katz Index is comprised of six items that measure the individual's performance in self-care activities: bathing, dressing, toileting, transferring, continence (exercising complete control over urination and defecation) and feeding, which obey a hierarchy of complexity. The answer alternatives for each of the six items are: dependent and independent, with the attribution of zero and one point respectively. The final result may vary between zero and six points, and the older adults are classified in three different groups - zero to two points: total dependence; three to four points: partial dependence; and five to six points: independence⁽¹⁰⁾.

Data were collected between October and December of 2010, after gaining the authorization of the participating institutions and the interviewed subjects, through the Free and Informed Consent Form. The study was approved by the Research Ethics Committee of the State University of Montes Claros, under protocol no. 2261/2010.

Data analysis was performed using SPSS® (Statistical Package for the Social Sciences) 16.0 for Windows®. The chi-square test (χ^2) was used for the association of variables, considering the level of significance at $p < 0.05$. In cases in which it was not possible to obtain Pearson's chi-square results, or when over 25% of the options presented numbers less than five, Fisher's exact test or the likelihood ratio were adopted, respectively.

RESULTS

The present study was developed with 125 older adults from three institutions. In Institution A, five (4%) older adults participated; in Institution B, 31 (24.8%) participated; and in Institution C, 89 (71.2%) participated. There was a prevalence of women (56%; $n=70$) with incomplete primary education (68%; $n=85$) and up to five years of institutionalization (57.6%; $n=72$). Independence was observed in 41.6% ($n=52$), partial dependence in 15.2% ($n=19$) and total dependence in 43.2% ($n=54$).

Table 1 presents the degree of dependence of the institutionalized elderly regarding self-care in the six activities of daily living. The results showed that the older adults were more often capable of feeding (86.4%; $n=108$) and transferring (67.2%; $n=84$) activities. On the other hand, bathing (31.2%; $n=39$) and toileting (42.4%; $n=53$) activities presented difficulties for many of the elderly subjects.

Regarding the Katz Index by age range, as presented in Table 2, it is observed that even among the elderly in the youngest age range (between 60 and 69 years of age), 42.5% ($n=14$) presented some degree of dependence in basic activities of daily

Table 1 – Distribution of the elderly, according to their ability to execute activities of daily living. Montes Claros, MG, December 2010.

Items	Ability to Execute the Activity			
	Independent		Dependent	
	n	%	n	%
Bathing	39	31.2	86	68.8
Dressing	54	43.2	71	56.8
Toileting	53	42.4	72	57.6
Transferring	84	67.2	41	32.8
Feeding	108	86.4	17	13.6
Continence	69	55.2	56	44.8

living. Results also indicate an increase in the occurrence of total dependence as age increases. In the comparative analysis between age range and degree of dependence, a statistically significant difference ($p=0.025$) was found.

No statistically significant difference was found in the comparison of the Katz Index by gender ($p=0.936$) (Table 3). Results indicate a similarity in the degree of dependence of the elderly according to gender, with similar percentage levels of independence (41.8% among men versus 41.4% among women) and total dependence (41.8% among men versus 44.3% among women).

Regarding the Katz Index and the time of institutionalization, it was observed that those older adults with an institutionalization time greater than five years presented a higher percentage of total dependence and a lower percentage of independence when compared with those who had been institutionalized less than five years. In the comparative

analysis between time of institutionalization and degree of dependence, no statistically significant difference was found ($p=0.441$) (Table 4).

DISCUSSION

The present study permitted the description of the degree of dependence of institutionalized older adults in the city of Montes Claros. The prevalence of women in this study may be explained by several factors that, either in isolation or in association, result in women living longer than men. This predominance is possibly justified by the current feminization of old age, resulting from the greater life expectancy of women in Brazil⁷. Institutionalization seems to be mainly a female issue, as evidenced by other studies that reveal a significant increase in the institutionalization rates of female older adults^(4,12,13).

This investigation revealed that almost 60% of the institutionalized older adults present some

Table 2 – Distribution of the elderly, according the degree of dependence (Katz Index) and age range. Montes Claros, MG, December 2010.

Age Range	Degree of Dependence							
	Independence		Partial Dependence		Total Dependence		Total	
	n	%	n	%	n	%	n	%
60-69	19	57.6	02	6.1	12	36.4	33	100
70-79	15	37.5	08	20.0	17	42.5	40	100
80-89	10	27.8	09	25.0	17	47.2	36	100
90-99	08	57.1	-	-	06	42.9	14	100
> 100	-	-	-	-	02	100	02	100
Total	52	41.6	19	15.2	54	43.2	125	100

* $p=0.025$ (Pearson Chi-Square)

Table 3 – Distribution of the elderly, according to the degree of dependence (Katz Index) and gender. Montes Claros, MG, December 2010.

Gender	Degree of Dependence							
	Independence		Partial Dependence		Total Dependence		Total	
	n	%	n	%	n	%	n	%
Men	23	41.8	09	16.4	23	41.8	55	
Women	29	41.4	10	14.3	31	44.3	70	
Total	52	41.6	19	15.2	54	43.2	125	

* $p=0.936$ (Pearson Chi-Square)

Table 4 – Distribution of the elderly according to degree of dependence (Katz Index) and time of institutionalization. Montes Claros, MG, December 2010.

Time of institutionalization	Degree of Dependence							
	Independence		Partial Dependence		Total Dependence		Total	
	n	%	n	%	n	%	n	%
< 5 years	33	45.8	9	12.5	30	41.7	72	100
> 5 years	19	35.8	10	18.9	24	45.3	53	100
Total	52	41.6	19	15.2	54	43.2	125	100

degree of dependence. These findings do not differ significantly from those found in other studies involving the same population group. A study developed in the city of Pelotas – RS identified that 77% of the older adults presented some degree of dependence in basic activities of daily living⁽¹³⁾. Another study developed in 2007 in homes for the aged in São Paulo also identified that over 64% of the older adults presented some degree of dependence⁽⁴⁾. A recent study developed in Fortaleza, Ceará, by Pontes-Barros et al. revealed that 71% of the institutionalized older adults were considered dependent in the execution of basic activities of daily living⁽¹⁴⁾. In Belo Horizonte, 84 older adults from a long-term care facility were evaluated using the Katz Index and half of these subjects presented some degree of dependence⁽¹⁵⁾.

Dependence is not a permanent condition; but, rather, it is a dynamic process whose evolution may be modified, prevented and/or reduced. Such evolution in this process suggests the existence of qualified and committed services to the care of the elderly. Care needs require the development of basic activities of daily living, and if the subject is not able to perform self-care, the institution takes over the role of provider of these care needs⁽⁴⁾.

The determinants of functional disability are multifactorial. The presence of the same risk factors for functional limitation in different individuals may generate various manifestations, with different repercussions on the ability to perform basic activities of daily living. The social and physical environment and emotional, economic and health factors interact in the expression of the entire functional potential of the older adult⁽¹⁶⁾.

Although the results of this study did not present statistically significant differences between dependence and gender, other studies have demonstrated

that female older adults present greater degrees of dependence in relation to male older adults^(4,17).

The prevalence of functional disability in women in relation to men may not be explained by the greater occurrence, but by the differences in survival and in the associated morbidities. Given the fact that women live longer than men, they also experience a greater number of chronic diseases and comorbidities, resulting in functional limitation and disability^(17,18).

Regarding the degree of dependence when comparing age range, it was possible to observe an increase in the percentage of older adults with total dependence as age advanced, with a statistically significant difference among the groups. A study developed in long-term care facility in 2005 also revealed progression in cognitive and functional decline as the elderly aged⁽⁴⁾.

The number of older adults with some degree of dependence increases with age, and approximately half of those over 80 years of age present limitations in their daily activities². Another study verified that, in the age range between 80 and 90 years, 69% of the older adults were dependent and, in the group between 70 and 79 years, 14% were dependent for basic activities of daily living⁽¹⁹⁾.

The aging process brings a reduction in the quality and quantity of information needed for effective motor and cognitive control, and many organic systems experience this decline, which tends to be linear as a consequence of time without a definition of the exact point of transition, as occurs in other phases in life⁽¹⁸⁾. Hence, the encouragement of independence in institutionalized older adults of any age range is a fundamental condition for the maintenance of their physical, behavioral and cognitive independence.

The evaluation of the items in the Katz Index showed that the activities related to self-care, such

as bathing, toileting and dressing, were compromised for a significant number of the older adults interviewed. Dependence in these activities has greater repercussions than simply depending on a caregiver. The shame that most of the elderly feel regarding the exposure of their body, even to people who are known to them, generates embarrassment, which may lead to health complications. The delay or refusal of the older adult to accept assistance to perform intimate hygiene activities may enable the development of pressure ulcers, genital infections and other complications^(16,17).

In terms of transferring, 31.9% of the older adults are at least partly dependent. This indicates that the older adult who requires help to transfer will end up being dependent in other activities. A longitudinal study demonstrated that loss of mobility and the consequent difficulty experienced in transferring may double the risk of death. The lack of mobility in the studied elderly individuals takes away their ability to manage their lives and maintain their autonomy. Mobility is, generally, the first basic activity of daily living to be compromised, and if we consider that transferring is necessary for most of the other basic activities of daily living, we can expect that this will result in the loss of independence^(4,19).

The dependence observed for transferring may be related to the lack of knowledge of the professionals involved, and also to the restrictions of the environment, such as the absence of adapted toilets, bars in the bathrooms and adapted showers. A well-designed environment increases the functional ability of the elderly and prevents accidents; however, the physical space of the institutions is often inappropriately designed, neglecting to provide conditions to facilitate independence among the elderly, complicating functionality and compromising their transferring ability^(12,14).

Feeding is a task of subsistence, which is performed almost automatically by the patients and preserved until the final phase of life. Results indicate that this was the most highly preserved function among the elderly, which agrees with a study developed in the United Kingdom that verified the order of restriction of activities, beginning with bathing, transferring, dressing, toileting and, finally, feeding⁽²⁰⁾.

Regarding the continence component, almost half of the older adults present some level of de-

pendence for this activity. Incontinence may cause several problems for the elderly, as the consensus of the literature demonstrates, including alterations in personal, social and sexual relationships, and psychological, physical and economical alterations, negatively influencing the quality of life of this population⁽⁸⁾.

The results presented by this study reveal the importance of the evaluation of the degree of dependence of institutionalized older adults as a means of developing planning and implementing actions in the institutional scope, since alterations in functionality may be related to alterations in the execution of the activities that determine the functional ability and quality of life of the elderly.

CONCLUSION

Older adults with some degree of dependence in the execution of activities of daily living constitute most of the residents from long-term care facilities in the city of Montes Claros, Minas Gerais, Brazil. They presented difficulties in performing toileting, dressing and bathing activities, which are some of the most common self-care activities.

The high prevalence of dependence among the elderly demands greater investment in human resources on the part of long-term care facilities, in order to assure interdisciplinary and multiprofessional care aimed at the promotion of health and the prevention of functional disability.

In this sense, population aging brings challenges to society, demanding the implementation and development of social and public health policies suitable to the reality of the long-term care facilities, so as to assure comprehensive health care and better quality of life for the institutionalized elderly.

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