ASSOCIATION BETWEEN SOCIODEMOGRAPHIC AND HEALTH CHARACTERISTICS AND THE LEVEL OF DIFFICULTY OF LOCOMOTION OF ELDERLY

Associação entre características sociodemograficas e de saude e o grau de dificuldade de locomoção dos idosos

Asociación entre características sociodemograficas y de salud y el grado de dificultad de locomoción de ancianos

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ABSTRACT

Objective: this article aims to analyze the association between sociodemographic and health characteristics and the degree of locomotion difficulty of the elderly in Brazil. **Methods:** the partial proportional odds model and data from the National Health Survey 2013 were used. **Results:** in the adjusted analysis, a greater degree of locomotion difficulty was observed among older, unmarried elderly (OR=1/0.759=1.318; p-valor<0,001), without education level (OR=1.433, p-value=0.026), who were in the southern region (OR=1.448, p-value=0.019) and reported worse overall health. In addition, the elderly with a diagnosis of chronic, physical or mental illness had a greater odds of reporting difficulty in locomotion (OR=1.645; p-value<0.001). **Conclusion:** due to the types of factors associated, health promotion and education actions are necessary to reduce the complications and damages to the health of the elderly that compromise their functional capacity, especially in the Southern region of Brazil.

Descriptors: Aging; Mobility Limitation; Health of the elderly; Cross-sectional studies; Logistic models.

RESUMO

Objetivo: analisar a associação entre características sociodemográficas e de saúde e o grau de dificuldade de locomoção dos idosos, no Brasil. **Métodos:** foi utilizado o modelo de chances proporcionais parciais e os dados da Pesquisa Nacional de Saúde 2013. **Resultados:** na análise ajustada, observou-se maior grau de dificuldade de locomoção entre idosos mais velhos, não casados (OR=1/0,759=1,318; p-valor<0,001), sem instrução (OR=1,433;p-valor=0,026), residentes na região Sul (OR=1,448;p-valor=0,019) e que reportaram piores níveis de saúde geral. Além disso, idosos com diagnóstico de doença crônica, física ou mental apresentaram maior chance de reportar dificuldade de locomoção (OR=1,645;p-valor<0,001). **Conclusão:** devido à natureza dos fatores associados, destaca-se a necessidade de

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ações de promoção e educação em saúde a fim de reduzir as complicações e danos à saúde dos idosos que comprometam a sua capacidade funcional, especialmente na região Sul do Brasil.

Descritores: Envelhecimento; Limitação da Mobilidade; Saúde do idoso; Estudos transversais; Modelos logísticos.

RESUMÉN

Objetivo: el presente artículo tiene como objetivo analizar la asociación entre características sociodemográficas y de salud y el grado de dificultad de locomoción de los ancianos en Brasil. **Métodos:** se utilizó el modelo de odds proporcionales parciales y los datos de la Encuesta Nacional de Salud 2013. **Resultados:** en el análisis ajustado, se observó mayor grado de dificultad de locomoción entre ancianos mayores, no casados (OR =1/0,759=1,318; p-valor<0,001), sin instrucción (OR=1,433; p-valor=0,026), residentes en la región Sur (OR=1,448; p-valor=0,019) y que reportaron peor salud general. Además, ancianos con diagnóstico de enfermedad crónica, física o mental presentaron mayor odds de reportar dificultad de locomoción (OR =1,645;p-valor<0,001). **Conclusión:** debido a la naturaleza de los factores asociados, se destaca la necesidad de acciones de promoción y educación en salud para reducir las complicaciones y daños a la salud de los ancianos que comprometen su capacidad funcional, especialmente en la región Sur de Brasil.

Descriptores: Envejecimiento; Limitación de la Movilidad; Salud del anciano; Estudios transversales; Modelos logísticos.

INTRODUCTION

Population aging is a worldwide phenomenon that occurs in both developed and developing countries[1]. In Brazil, due to the decrease in fertility and mortality levels, there were changes in the age structure of the Brazilian population, especially from the mid-1980s, characterizing a society in an accelerated process of population aging[2]. In 2008, the relative participation of the population aged 60 and over corresponded to 9.5%. It is estimated that 13.7% of the population will be aged 60 and over by 2020, rising to 29.8% by 2050[2].

The accelerated growth of the elderly population in Brazil can be a serious problem for the government and society, as it can bring chronic conditions, functional disability and sequelae that require greater attention to the health of the elderly and continuity of care[3,4]. According to Nunes et al (2017), there is a higher number of hospitalizations among elderly people with multimorbidity, which may impact on their health, particularly the reduction of their functional capacity[5]. In addition, there is higher spending on health services among the elderly, due to the higher prevalence of chronic degenerative diseases in this age group[6].

Functional disability is defined by the difficulty or need for help in performing the basic daily tasks or more complex tasks necessary for the individual to live independently in the community[7]. Functional disability is associated with lower quality of life among the elderly, and has consequences for both the elderly, their families and society[8-10].

This disability can be measured through difficulty and dependence scales, and can be measured by indicators such as the level of difficulty in performing certain activities, or as the level of assistance or dependence in performing activities. The measure of dependency assesses whether or not an individual needs help from another person, and the individual is considered to be dependent if they need help or if they are unable to perform an activity. The difficulty scale assesses the level of effort expended by individuals to perform functional activities, indicating the degree of difficulty to perform them[7].

This study aims to analyze the association of sociodemographic and health characteristics with the range of mobility of the elderly in Brazil.

METHODS

In this work, data from the National Health Survey (Pesquisa Nacional de Saúde - PNS) 2013, a national household survey conducted by the Brazilian Institute of Geography and Statistics (IBGE) in agreement with the Ministry of Health (Ministério da Saúde - MS) about health conditions of residents were used, focusing on aspects related to health perception, lifestyles and chronic conditions. From an epidemiological point of view, PNS is a cross-sectional observational study based on a sample selected through a three-stage conglomerate sampling plan, where sectors form the primary sampling units, households form the secondary units, and residents aged 18 years and over, tertiary units[11].

The population analyzed is composed of elderly aged 60 years or over who live in permanent private households in Brazil.

From the five alternatives to the question "In general, how difficult is for you to get around?" in module N of health perception of the PNS 2013 questionnaire, we obtained an ordinal outcome with three mutually exclusive categories representing different levels of mobility difficulty of the elderly (severe, at most moderate and none), where in the "severe" category are considered the elderly who responded an intense level difficulty or can't get around. In the category "at most moderate" are considered the elderly who responded the mild or medium level of difficulty. And in the category "none" we consider those individuals who reported not having any difficulty in locomotion.

Regarding the sociodemographic and health characteristics of the elderly, the following were considered in this paper: Gender (male, female); Age range (from 60 to 69 years old, from 70 to 79 years old, 80 years old or older); Color/Race (white, not white); Marital status (married, not married); Large Brazilian regions (North, Northeast, Southeast, South, Midwest); Domicile location area (urban, rural); Educational level (uneducated, elementary school, high school, higher education); Quality of housing construction (adequate, inadequate); Health insurance (yes, no); Looking for the same place, same doctor or same health service when health care is needed (yes, no); General self-rated health (very good/ good, fair, poor/very poor); Diagnosis of any chronic physical or mental illness (yes, no).

In the present study, the ordinal logistic regression model was adjusted, more specifically the partial proportional odds (PPO) model, to study the association between sociodemographic and health variables and the range of mobility in the elderly, and this outcome was used as a *proxy* for functional disability[12]. Adjusted odds ratios (OR) were estimated, with their respective 95% confidence intervals. To assess the significance of the association, the *Wald test* was used, setting the significance level of 5% (p-value≤0.05). Regarding the modeling strategy, the model was adjusted considering simultaneously all explanatory variables, and excluded one by one, until selecting the model in which all variables have at least one of their levels significantly associated with the outcome.

Statistical analyzes were developed using STATA, version 11.0. To adjust the PPO model, we used the *gologit29* command and the module *survey*, including the *autofit* option. The survey allowed us to include the PNS sampling plan information, such as conglomeration, stratification and sample weights. The *autofit* option allows you to evaluate whether the effect of each explanatory variable differs through equations, that is, whether the assumption of individual parameter homogeneity is satisfied or not[12].

Only secondary data were used in this study, without the possibility of identifying the subjects, in accordance with the ethical principles of the National Health Council (CNS) Resolution No. 510 of April 7, 2016.

RESULTS

Considering the total of elderly, 8,282 (73.9%) reported not having any walking difficulties, while 715 (6.8%) reported having severe walking difficulties. The remaining elderly reported at most a moderate degree of difficulty (Table 1).

Table 1 - Percentage distribution (%) of elderly aged 60 years and older by level of difficulty in locomotion. Brazil, 2013

Level of difficulty (n=11,175)	Percentage of elderly (%)
Nome (n=8,282)	73.9
At most moderate (n=2.178)	19.3
Severe (n=715)	6.8
Total	**100.0**

n: number of records in database;
%: percentage calculated using complex sampling plan information

According to Table 2, 6,621 elderly were female (56.4%), 5,047 were married (57,4%) and 5,314 had white skin color (53,6%). On total, 6,237 of the elderly were in the age group of 60 to 69 years (56.4%). Regarding the place and condition of residence, 3,209 (47.9%) elderly were from the Southeast, 8,997 (85.2%) from the urban area and 8,356 (78.8%) lived in adequate quality housing. The most common educational level among the elderly was elementary school (45.5%) and only 10.2% of the elderly had higher education, with 4,670 and 1,175 records, respectively.

Table 2 - Percentage distribution of the elderly by level of difficulty in locomotion, according to their sociodemographic and health characteristics. Brazil, 2013.

Characteristics of the elderly	Percentage of elderly (%)	Level of difficulty		
		None	At most moderate	Severe
Gender				
Male (n=4,554)	43.6	76.9	17.0	6.1
Female (n=6,621)	56.4	71.5	21.1	7.4
Age Group				
60-69 anos (n=6,237)	56.4	82.9	13.2	3.9
70-79 (n=3,441)	30.0	69.6	22.9	7.5
80 or older (n=1,497)	13.6	45.8	36.8	17.4
Ethinicity				
White (n=5,314)	53.6	73.8	19.5	6.7
Not white (n=5,861)	46.4	73.9	19.1	7.0
Marital Status				
Married (n=5,047)	57.4	77.8	16.9	5.3
Not married (n=6,128)	42.6	68.6	22.6	8.8
Brazilian Regions				
North (n=1,681)	5.4	74.2	18.4	7.4
Northeast (n=3,394)	25.2	70.9	20.9	8.2
Southeast (n=3,209)	47.9	76.3	18.1	5.6
South (n=1,625)	15.1	69.7	22.8	7.5
Midwest (n=1,266)	6.4	76.9	14.8	8.3

Characteristics of the elderly	Percentage of elderly (%)	Level of difficulty		
		None	At most moderate	Severe
Household Area				
Urban (n=8,997)	85.2	74.4	19.0	6.6
Rural (n=2,178)	14.8	70.5	21.5	8.0
Educational Level				
Uneducated (n=3,860)	32.1	65.4	23.7	10.9
Elementary School (n=4,670)	45.5	74.5	19.6	5.9
High School (n=1,470)	12.2	83.7	13.4	2.9
Higher Education (n=1,175)	10.2	85.5	11.8	2.7
Quality of Housing				
Adequate (n=8,356)	78.8	74.8	18.9	6.3
Inadequate (n=2,819)	21.2	70.2	20.9	8.9
Health Insurance Plan				
Yes (n=3,342)	32.0	76.3	18.0	5.7
No (n=7,833)	68.0	72.7	20.0	7.3
Goes to the same place or service				
Yes (n=8,664)	79.5	73.7	19.5	6.8
No (n=2,511)	20.5	74.2	18.8	7.0
Health self-assessment				
Very good/Good (n=4,907)	44.4	86.8	9.9	3.3
Regular (n=4,801)	43.5	70.1	23.6	6.3
Bad/Very bad (n=1,467)	12.1	40.0	38.4	21.6
Diagnosis of any disease				
Yes (n=4,298)	40.0	65.3	25.8	8.9
No (n=6,877)	60.0	79.5	15.0	5.5

n: number of records in database;

%: percentage calculated using complex sampling plan information

Regarding health characteristics, 7,833 (68.0%) of the elderly had no health insurance, and 8,664 look for the same service, the same doctor or same place when they need care (79.5%). As for overall health self-assessment, 6,268 (55.6%) of the elderly reported poor health, while 4,907 (44.4%) rated their health as good/very good. In addition, 4,298 (40.0%) of the elderly were diagnosed with some chronic physical or mental illness.

From the bivariate analysis, it is possible to observe a higher percentage of elderly people reporting severe mobility difficulties among women (7.4%) and among those aged 80 or older (17.4%). Also regarding the age of the elderly, it is observed that the older the age group, the higher the percentage of elderly people reporting severe mobility difficulties. Slightly higher percentages of elderly with severe mobility difficulties were also observed among unmarried elderly (8.8%) and non-white elderly (7.0%) (Table 2).

As for the large Brazilian regions, there is a higher percentage of elderly people reporting some difficulty in locomotion in the Northeast (29.1%) and South (30.3%). Regarding the household location and the quality of housing construction, there is a higher percentage of elderly people with severe mobility difficulties in the rural area (8.0%) and

in households considered inadequate with regard to the construction quality of the housing (8.9%).

Regarding educational level, it was possible to notice that the percentage of elderly people who reported severe mobility difficulties increases as the level of education decreases, and the percentage of elderly people with severe mobility difficulties is 10.9% among the uneducated and 2.7% among those with higher education.

Regarding health aspects, it was found in the bivariate analysis that the percentage of the elderly who reported severe mobility difficulties is higher in the elderly without health insurance (7.3%) compared to those with health insurance (5.7%). It was observed that there is a considerable increase in the percentage of elderly people who reported severe mobility difficulties as their overall self-assessment health worsened. In addition, the percentage of elderly people with severe mobility difficulties is higher among the elderly who were diagnosed with chronic, physical or mental illness (8.9%), compared to the elderly who did not have this diagnosis (5.5%).

Table 3 presents the main results of the PPO model adjustment with all twelve explanatory variables considered in the present study. The following variables showed no

statistically significant effect at the 5% significance level (p-value <0.05) in either model equation: "gender", "ethnicity", "household area", "quality of housing construction", "health insurance plan" and "look for the same place, same doctor or same health service".

Table 3 - Results of the adjustment of the partial proportional odds (PPO) model explaining the level of difficulty in locomotion, considering all characteristics related to the elderly. Brazil, 2013.

Characteristics of the elderly	Comparisons					
	Equation 1: (At most moderate + Severe) versus None			Equation 2: Severe versus (None + At most moderate)		
	OR_{j1}*	P-value	$IC_{ORj1;95\%}$**	OR_{j2}**	P-value	$IC_{ORj2;95\%}$**
Gender						
Male	0,885	0,192	(0,736-1,064)	0,885	0,192	(0,736-1,064)
Female	1	-	-	1	-	-
Age Group						
60-69	0,185	<0,001	(1,493-0,229)	0,185	<0,001	(1,493-0,229)
70-79	0,367	<0,001	(0,293-0,459)	0,367	<0,001	(0,293-0,459)
80 or older	1	-	-	1	-	-
Ethinicity						
White	1,160	0,111	(0,967-1,393)	1,160	0,111	(0,967-1,393)
Not white	1	-	-	1	-	-
Marital Status						
Married	0,788	0,004	(0,671-0,925)	0,788	0,004	(0,671-0,925)
Not married	1	-	-	1	-	-
Brazilian Regions						
North	1,141	0,431	(0,822-1,585)	1,141	0,431	(0,822-1,585)
Northeast	1,076	0,576	(0,832-1,393)	1,076	0,576	(0,832-1,393)
Southeast	1,035	0,803	(0,792-1,351)	1,035	0,803	(0,792-1,351)
South	1,391	0,048	(1,003-1,928)	1,391	0,048	(1,003-1,928)
Midwest	1	-	-	1	-	-
Household Area						
Urban	0,989	0,925	(0,793-1,235)	0,989	0,925	(0,793-1,235)
Rural	1	-	-	1	-	-
Educational Level						
Uneducated	1,542	0,013	(1,094-2,172)	1,542	0,013	(1,094-2,172)
Elementary School	1,274	0,145	(0,920-1,764)	1,274	0,145	(0,920-1,764)
High School	0,946	0,754	(0,671-1,334)	0,946	0,754	(0,671-1,334)
Higher Education	1	-	-	1	-	-
Quality of Housing						
Adequate	0,922	0,473	(0,738-1,151)	0,922	0,473	(0,738-1,151)
Inadequate	1	-	-	1	-	-
Health Ensurance Plan						
Yes	1,092	0,353	(0,906-1,312)	1,092	0,353	(0,906-1,312)
No	1	-	-	1	-	-
Goes to the same place or service						
Yes	0,954	0,628	(0,788-1,155)	0,954	0,628	(0,788-1,155)
No	1	-	-	1	-	-
Health self-assessment						
Good	0,111	<0,001	(0,087-0,142)	0,154	<0,001	(0,108-0,218)
Regular	0,285	<0,001	(0,233-0,350)	0,285	<0,001	(0,233-0,350)
Bad	1	-	-	1	-	-
Diagnosis of any disease						
Yes	1,633	<0,001	(1,367-1,951)	1,232	0,138	(0,935-1,623)
No	1	-	-	1	-	-

*OR: Odds ratio

**IC: Confidence Interval

The variables "age group", "marital status", "large Brazilian regions" and "educational level" have equal (homogeneous) effects for both equations. The variables "general health self-assessment" and "diagnosis of any chronic, physical or mental illness" have associations that differ between the two equations (Table 4).

Table 4 - Results of the adjustment of the partial proportional odds (PPO) model explaining the level of difficulty in locomotion, containing only the characteristics of the selected elderly. Brazil, 2013

Characteristics of the elderly	Comparisons					
	Equation 1: (At most moderate + Severe) *versus* None			Equation 2: Severe *versus* (None + At most moderate)		
	OR_{j1}*	P-value	$IC_{ORj1;95\%}$**	OR_{j2}**	P-value	$IC_{ORj2;95\%}$**
Age group						
60-69	0,181	<0,001	(0,147-0,222)	0,181	<0,001	(0,147- 0,222)
70-79	0,359	<0,001	(0,288-0,448)	0,359	<0,001	(0,288-0,448)
80 or older	1	-	-	1	-	-
Marital Status						
Married	0,759	<0,001	(0,653-0,883)	0,759	<0,001	(0,653-0,883)
Not married	1	-	-	1	-	-
Brazilian Region						
North	1,101	0,563	(0,795-1,525)	1,101	0,563	(0,795-1,525)
Northeast	1,062	0,644	(0,824-1,368)	1,062	0,644	(0,824-1,368)
Southeast	1,041	0,765	(0,800-1,354)	1,041	0,765	(0,800-1,354)
South	1,448	0,019	(1,064-1,971)	1,448	0,019	(1,064-1,971)
Midwest	1	-	-	1	-	-
Educational Level						
Uneducated	1,433	0,026	(1,043-1,968)	1,433	0,026	(1,043-1,968)
Elementary School	1,204	0,239	(0,884-1,639)	1,204	0,239	(0,884-1,639)
High School	0,926	0,662	(0,657-1,306)	0,926	0,662	(0,657-1,306)
Higher Education	1	-	-	1	-	-
Health Self-assessment						
Good	0,113	<0,001	(0,089-0,145)	0,156	<0,001	(0,110-0,221)
Regular	0,289	<0,001	(0,236-0,355)	0,289	<0,001	(0,236-0,355)
Bad	1	-	-	1	-	-
Diagnosis of any disease						
Yes	1,645	<0,001	(1,380-1,962)	1,247	0,117	(0,947-1,639)
No	1	-	-	1	-	-

*OR: Odds ratio

**IC: Confidence Interval

Based on the PPO model selected, it is concluded that the older the age, the greater the chance of the elderly presenting worse degree of mobility difficulty. Unmarried elderly people are 31.8% more likely to have worse mobility difficulties compared to married elderly (OR = 1 / 0.759 = 1.318; p-value <0.001). Elderly residents of the southern region have a 44.8% higher chance of having a worse degree of mobility difficulty than the elderly in the Midwest (OR = 1.448; p-value = 0.019) (Table 4).

The chance of the uneducated elderly to have a worse range of mobility is 44.3% higher than the elderly with higher education (OR = 1.433; p-value = 0.026).

Elderly people with a diagnosis of any chronic, physical or mental illness have a chance of presenting some level of difficulty in walking (at most moderate or severe) 64.5% higher than the elderly without diagnosis of these diseases (OR = 1.645; p-value < 0.001).

The chance of elderly with good health to present severe mobility difficulties is 84.4% lower than those with poor health (OR = 0.156; p-value <0.001). And the chance of the elderly with good health present some level of difficulty (at most moderate or severe) is 88.7% lower than the elderly with poor health (OR = 0.113; p-value <0.001). In addition, the elderly with regular health self-assessment are 71.1% less likely to have a worse degree of mobility difficulty compared to the elderly with poor health (OR = 0.289; p-value <0.001).

Regarding the quality of fit of the selected PPO model, a *Nagelkerke* pseudo-R^2 of 24.6% and an overall rate of 74.8% were obtained, indicating that approximately 75% of the elderly were correctly classified by the selected model.

DISCUSSION

Functional disability is a concept used to assess the health conditions of the elderly. This study used the level of difficulty in mobility as a *proxy* for functional disability, containing three categories ("none", "at most moderate", "severe").

In this study, it was observed that the older the age, the greater the chance of the elderly presenting worse range of mobility. The studies by Assis et al (2014) and Barbosa et al (2014) also showed that older individuals have greater functional disability[1,13.] Thus, the progress of aging, coupled with the biological process itself, is directly related to higher levels of functional disability.

Although some studies have shown that functional disability in older women is higher than in men, other studies, such as Pereira et al (2017) and Virtuoso-Junior et al (2016) observed no association between gender and functional disability as in the present study[13-15].

The chance of married elderly people presenting a worse degree of walking difficulty was lower than that of unmarried elderly people. Barbosa et al (2014) also found similar results in the sense that older people with a partner have a lower chance of functional disability[1].

Regarding the large Brazilian regions, elderly residents in the southern region of Brazil had worse levels of mobility difficulties compared to the elderly in the Midwest. Higher disability among older adults living in the southern region could be attributed to greater longevity in this region which, in turn, could lead to a higher probability of survival with functional disability, especially among older adults.

Regarding the level of education, it was observed that elderly without education have a higher chance of functional disability, compared to the elderly with higher education. It was also observed by Nunes et al (2017) and Pereira et al (2017), which can be explained, in part, by the greater difficulty of access by the poorer elderly to health services and, consequently, the lower access to treatments and medicines[10,15]. Another explanation for the association of educational level with the level of difficulty in mobility in the elderly is that individuals with higher educational level tend to be less exposed to risk factors for diseases and adopt healthier habits and behaviors.

There was an association of the general health self-assessment of the elderly with their level of difficulty in mobility, which corroborates the study by Nunes et al (2017) in the sense that older people who report poor health tend to have greater functional disability compared to older people who report good health[10]. This association can be explained by the fact that general health self-assessment is an important predictor of morbidity and mortality. Additionally, an association between the diagnosis of some chronic, physical or mental illness and the level of difficulty in locomotion was observed, showing that chronic diseases had a strong influence on the functional disability of the elderly, including Barbosa et al (2014) show this association with specific diseases such as stroke, heart disease and diabetes[1].

FINAL CONSIDERATIONS

Regarding the potentialities of the present study, we highlight the use of the ordinal logistic regression model, but specifically the PPO, which takes into account the ordinal nature of the response variable (outcome), unlike studies that dichotomized the functional disability outcome, which may generate loss of information. Another potentiality refers to the inclusion in the model adjustment of the main aspects of the sampling plan, such as PNS 2013 conglomeration, stratification and survey weights, obtaining adequate estimates for the model parameters and their association and precision measurements, and consequently avoiding incorrect conclusions based on the adjusted statistical model.

Regarding the limitation of this study, we point out the non-inclusion in the statistical modeling of the income variable, which is an important indicator of access to goods and services, but its non-consideration in the study is due to the non-disclosure of this information in the database. Another limitation refers to the difficulty of comparability between studies on functional disability, due to the diversification of indicators used to measure functional disability and the use of different statistical models to identify possible risk factors. In this work, the partial proportional odds (PPO) model was adopted, while others used the binary logistic regression model (ASSIS et al, 2014; Kagawa & Corrente, 2015), Poisson regression model (NUNES et al, 2017), the multinomial logistic regression model (Barbosa et al, 2014) and the multilevel model[1,10,13,16].

From this study, it was concluded that there is a higher level of difficulty in mobility among the older, unmarried, uneducated elderly, living in the South region, diagnosed with some chronic, physical or mental illness and who reported worse levels of mobility in general health self-assessment. Thus, the need to carry out actions aimed at health promotion and education for the elderly population is highlighted, in order to reduce the complications caused by chronic diseases that may compromise their functional capacity.

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