

USE OF MEDICATIONS IS STRONGLY ASSOCIATED WITH WORSE SELF-PERCEIVED HEALTH IN INSTITUTIONALIZED AND COMMUNITY-DWELLING ELDERLY

Uso de medicamentos está fortemente associado com pior autopercepção de saúde em idosos institucionalizados e não institucionalizados

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ABSTRACT

OBJECTIVE: This study aimed to investigate self-perceived health among a sample of institutionalized and a sample of community-dwelling elderly in two cities of the São Paulo State, Brazil: Bauru and Botucatu. **METHODS:** Ninety-five elderly individuals from ten long-term care homes from Bauru, SP and Botucatu, SP and 101 community-dwelling elderly users of three centers for the elderly in Bauru, SP were assessed. After obtaining the personal and health data, the evaluation of self-perception of health was performed by asking how the elderly person perceived his health in the most recent days; the response options were very poor, poor, fair, good or excellent. **RESULTS:** There was a statistically significant difference (< 0.001) between institutionalized and community-dwelling elderly considering self-perceived health. After adjusting the model of ordinal logistic regression, it was observed that institutionalized individuals who regularly used prescription medications had a chance 7.5 times greater than nonusers of having a worse self-perceived health [OR = 7.5; 95%CI (2.1–26.6; $p = 0.002$)]. In the community-dwelling group it was observed that individuals who regularly used prescription medications had a chance 4.5 times greater than nonusers of having a worse self-perceived health [OR = 4.5; 95%CI (1.5–13.7; $p = 0.008$)]. **CONCLUSIONS:** Worse self-perceived health was associated with taking prescription medications among both institutionalized and community-dwelling elderly.

KEYWORDS: self concept; health; aged; Brazil.

RESUMO

OBJETIVO: Este estudo teve como objetivo investigar autopercepção de saúde em uma amostra de idosos institucionalizados e uma de não institucionalizados em duas cidades do Estado de São Paulo: Bauru e Botucatu. **MÉTODOS:** Participaram noventa e cinco idosos de nove instituições de longa permanência de Bauru e de uma de Botucatu e 101 idosos usuários de três centros para idosos em Bauru. Após a obtenção dos dados pessoais e de saúde, avaliação da autopercepção de saúde foi realizada perguntando como o idoso percebeu sua saúde nos últimos dias; as opções de resposta foram péssima, ruim, regular, boa ou excelente. **RESULTADOS:** Houve diferença estatisticamente significante entre os grupos, considerando autopercepção de saúde (< 0.001). Com o ajuste do modelo de regressão logística ordinal, observou-se que os indivíduos institucionalizados que usavam regularmente medicamentos prescritos por médicos tinham 7,5 vezes mais chances que os que não usavam de ter uma autopercepção de saúde pior [OR = 7,5; IC95% (2,1–26,6; $p = 0,002$)]. No grupo dos não institucionalizados, indivíduos que usavam regularmente medicamentos prescritos por médicos tinham 4,5 vezes mais chances do que os que não usavam de ter uma autopercepção de saúde pior [OR = 4,5; IC95% (1,5–13,7; $p = 0,008$)]. **CONCLUSÕES:** Uma pior auto-percepção de saúde foi associada a tomar medicamentos de uso contínuo em idosos institucionalizados e da comunidade.

PALAVRAS-CHAVE: autopercepção; saúde; idoso; Brasil.

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INTRODUCTION

The world's elderly population continues to grow at an unprecedented rate. Currently, 8.5% (617 million) of people worldwide are aged 65 years or older, a figure set to rise to 17% by 2050.¹ Brazil is one of the countries with the greatest growth of the elderly population in the world. Approximately 117,000 (0.6%) of the Brazilian elderly population live in care homes. Changes in demographic, social and health factors are related to institutionalization in Brazil.²

Health is essential to ensure independence, autonomy and quality of life. Identifying aspects involved in the perception of health among the elderly can show more vulnerable groups and conditions, thereby enabling more specific and more effective measures to improve the quality of life in these groups.^{3,4}

Self-perceived health is a useful indicator in the investigation of health, which enables an effective, rapid and low-cost measure of the health of population groups. It is associated not only with the physical, cognitive and emotional aspects of health but also with one's functional capacity and with mortality.^{4,5} Elderly people who perceive their health as poor or very poor are proven to have a higher risk of mortality by all causes of death than those who report having good or excellent health.⁵ Furthermore, the perception of health is associated with the real health status of people and can be seen as a representation of objective health evaluations. It tends to remain constant throughout adulthood and to decline during ageing, which makes it important to be evaluated.^{4,5}

The aim of the present study was to investigate self-perceived health among a sample of institutionalized and a sample of noninstitutionalized Brazilian elderly as well as to verify associations between self-perceived health and socio-demographic, clinical and functional aspects.

METHODS

In this cross-sectional study, between February 1st and July 31st of 2016, a sample of institutionalized and a sample of community-dwelling elderly were assessed.

The city of Bauru has 33 long-term care homes and the city of Botucatu has 11, all of them registered in the National Health Surveillance Agency (ANVISA). The institutionalized individuals were from nine care homes in Bauru and from one care home in Botucatu. The long-term care homes were randomly selected from the ANVISA list.

The community-dwelling elderly were users of private and governmental projects for the elderly: the "Open University for the Elderly", the "Center for Coexistence" and the "Elderly Reference Center".

All elderly individuals from long-term care homes, and from private and governmental projects were assessed. They were screened for cognitive impairment using the Mini-Mental State Examination (MMSE). A MMSE score equal to or greater than the expected in relation to their formal education level^{6,7} was an inclusion criterion. In the institutionalized group, the elderly should have resided in the institution for at least the past six months.

In the basic evaluation, obtained by interviewing the elderly and assessing their medical charts, the following information was obtained: instrumental activities of daily living by using the Lawton's Scale,⁸ if there were falls or hospitalizations in the last 12 months, regular use of prescription medication, practice of physical activity, nutritional status (body mass index) and the number of chronic diseases. After obtaining the personal and health data, the evaluation of self-perception of health was performed by asking how the elderly person perceived his health in the most recent days; the response options were very poor, poor, fair, good or excellent.

The whole sample signed the Informed Consent approved by the Research Ethics Committee of the Botucatu Medical School, São Paulo State University (#1.356.465), and was interviewed by a single researcher, responsible for the standardization of interviews.

Statistical analysis

The variable "age" presented normal distribution and was described in mean and standard deviation. The categorical variables were described in absolute and relative frequency, and compared using the χ^2 Test. In the multivariate analysis of each group, ordinal logistic regression was used, and the dependent variable was "self-perceived health". The data were analyzed via the statistical program SPSS (version 22). The significance level used was 0.05.

RESULTS

Ninety-five institutionalized and 101 community-dwelling elderly were evaluated. The mean age of the group of community-dwelling elderly was 68.8 (\pm 7.0) and of the institutionalized ones was 78.9 (\pm 10.3) years. There was a statistically significant difference between the two groups regarding age ($p < 0.001$).

The results of the analysis of different sociodemographic and health data are shown in Table 1. There was a statistically significant difference between the institutionalized and community-dwelling groups in the following variables: marital status ($p < 0.001$), falls ($p = 0.006$), hospitalization ($p = 0.003$), nutritional status ($p < 0.001$) and the practice

of physical activity ($p < 0.001$). There was a statistically significant difference between institutionalized and community-dwelling groups regarding self-perceived health ($p < 0.001$) and daily living activities ($p < 0.001$).

In the multivariate analysis, “ordinal logistic regression model” was adjusted to the variable “self-perceived health”. Variables with associations with self-perceived health that showed $p < 0.25$ were included in the regression analysis.

Age was included as a covariate in the regression analysis of the two groups. For the institutionalized group, the variables “regular use of prescription medication” and “nutritional status (body mass index)” were included; it was observed that individuals who regularly used prescription medications had a 7.5 times greater chance of having a worse self-perceived health than non-users [OR = 7.5; 95%IC (2.1–26.6; $p = 0.002$)]. For the community-dwelling group, “gender”, “hospitalizations

Table 1 Demographic and health factors of the institutionalized (N = 95) and community-dwelling (N = 101) elderly group.

	GNI n (%)	GI n (%)	P
Gender			
Female	85 (84.1)	70 (73.7)	0.104
Male	16 (15.9)	25 (26.3)	
Marital status			
Widowed	24 (23.8)	41 (43.1)	< 0.001
Married	47 (46.5)	12 (12.6)	
Divorced	20 (19.8)	15 (15.8)	
Single	10 (9.9)	27 (28.5)	
Nutritional status			
Underweight	10 (0.9)	27 (28.4)	< 0.001
Normal	40 (39.6)	44 (46.3)	
Overweight	51 (50.5)	24 (25.5)	
Number of chronic diseases			
1	32 (31.7)	41 (43.1)	0.240
2	29 (28.8)	25 (26.3)	
3	43 (3.9)	2 (2.1)	
≥ 4	3 (2.9)	–	
None	33 (32.7)	27 (28.5)	
Falls	22 (21.8)	38 (40.0)	0.009
Hospitalization	13 (12.9)	29 (30.6)	0.005
Regular use of prescription medications	86 (85.1)	83 (88.4)	0.808
Practice of physical activity	79 (78.2)	13 (13.7)	< 0.001
Self-perceived health			
Very poor	–	7 (7.4)	< 0.001
Poor	1 (0.9)	8 (8.4)	
Fair	25 (24.8)	38 (40.0)	
Good	53 (52.5)	35 (36.8)	
Excellent	22 (21.8)	7 (7.4)	
Instrumental activities of daily living			
Independent	35 (34.6)	–	< 0.001
Partially dependent	66 (65.3)	48 (50.5)	
Totally dependent	–	47 (49.4)	

GNI: group of community-dwelling elderly; GI: group of institutionalized elderly; p: chi-square test.

in the last 12 months”, “regular use of prescription medications”, “practice of physical activities” and “activities of daily living” were included, and it was observed that individuals who regularly used prescription medications had a 4.5 times greater chance of having a worse self-perceived health than non-users [OR = 4.5; 95%IC (1.5–13.7; $p = 0.008$)].

DISCUSSION

Previous Brazilian studies with community-dwelling elderly found a prevalence of 11.0 to 62.2% negative responses related to self-perception of health,^{9–14} these data are higher than the ones found in the sample of the present study. In the present study, community-dwelling individuals were users of reference centers for the elderly in which physical and cultural activities are routinely offered, so a better self-perceived health than the one observed in these previous studies may be due to the populations evaluated in these studies not being from reference centers.

In previous Brazilian studies, 35% of the institutionalized patients considered their health poor or very poor,¹⁵ a high percentage when compared to the sample of this study, in which 15.8% consider their health poor or very poor. Studies from other countries have reported poor or very poor self-perceived health status among institutionalized older people from 15 to 63%.^{16–18} There are some aspects to be considered about this broad range of responses on self-perceived health among elderly people institutionalized in other countries: cultural differences and different scenarios of nursing homes.

The regular use of prescription medications was associated with worse self-perception of health in the two groups of the present study. To take medications on regular basis seems to be a negative factor for self-perception of health regardless of the number of medications taken daily or if the medication is self-administered or not.¹⁰

Functional capacity and age are associated with self-perceived health, as observed in the group of community-dwelling. As functional dependence and age increase, there is a higher chance that elderly perceive their health as poor.¹⁹

After an adjusted analysis, a Brazilian study found higher prevalence of medication use among women and elderly with poorer self-perception of health. In this study, self-perception of health was inversely associated with medication use.²⁰ In Sweden, a study that assessed some determinants for the use of drugs in women showed, after an adjusted analysis, a prevalence of 4.1 times more medication use in those who perceived their health as poor or very poor when compared to those who perceived their health as excellent.²¹ Prevalences similar to those were found in the present study, where both institutionalized and non-institutionalized subjects showed a greater chance of perceiving their health as poor when they used medication. This result may be due to the side effects of medications.

Up to the present date, there are few Brazilian studies on self-perceived health in elderly, especially institutionalized ones, making more precise comparisons difficult.²²

The present study presents some limitations that must be recognized: only a sample of long-term care homes of the two cities was assessed and the population of non-institutionalized elderly may not represent community-dwelling elderly due to the fact that the sample was taken from specialized centers. Moreover, the use of the MMSE as an exclusion criterion does not encompass all the institutionalized elderly. Future studies should be carried out so that institutionalized elderly people with cognitive deficits are evaluated for their self-perception of health.

The present study is keen as it demonstrates the importance of continuously evaluating the use of medication associated with the self-perception of health of both institutionalized and non-institutionalized elderly, aiming at a health as good as possible.

CONCLUSIONS

Worse self-perceived health was associated with taking prescription medications among both institutionalized and community-dwelling elderly.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

REFERENCES

1. He W, Goodkind D, Kowal P. *An Aging World: 2015*. Washington, D.C.: U.S. Government Publishing Office; 2016.
2. Instituto de Pesquisa Econômica Aplicada. *Características das instituições de longa permanência para idosos - Região Sudeste*. Rio de Janeiro: Ipea; 2010.
3. Instituto Brasileiro de Geografia e Estatística. *Pesquisa nacional de saúde: 2013: percepção do estado de saúde, estilos de vida e doenças crônicas: Brasil, grandes regiões e unidades da federação*. Rio de Janeiro: IBGE; 2014.
4. Stiefel MC, Perla RJ, Zell BL. A Healthy Bottom Line: Healthy Life Expectancy as an Outcome Measure for Health Improvement Efforts. *Milbank Q*. 2010;88(1):30–53.
5. White AM, Philogene GS, Fine L, Sinha S. Social Support and Self-Reported Health Status of Older Adults in the United States. *Am J Publ Health*. 2009;99(10):1872–8.
6. Brucki SMD, Nitri R, Caramelli P, Bertolucci PHF, Okamoto IH. Sugestões para o uso do mini-exame do estado mental no Brasil. *Arq Neuro-Psiquiatr*. 2003;61(3B):777–81.

7. Folstein MF, Folstein SE, McHugh PR. Mini-mental state: a practical method for grading the cognitive state of patients for the clinician. *J Psychiatric Res.* 1975;12:189-98.
8. Santos RL, Virtuoso Júnior JS. Reliability of the Brazilian version of the Scale of Instrumental Activities of Daily Living. *Rev Bras Pesqui Saúde.* 2008;21(4):290-6.
9. Medeiros SM, Silva LSR, Carneiro JA, Ramos GCF, Barbosa ATF, Caldeira AP. Fatores associados à auto percepção negativa da saúde entre idosos não institucionalizados de Montes Claros, Brasil. *Ciênc Saúde Colet.* 2016;21(11):3377-86.
10. Silva RJS, Smith-Menezes A, Tribess S, Rómo-Perez V, Virtuoso Júnior JS. Prevalência e fatores associados à percepção negativa da saúde em pessoas idosas no Brasil. *Rev Bras Epidemiol.* 2012;15(1):49-62.
11. Agostinho MR, Oliveira MC, Pinto MEB, Balardin GU, Harzheim E. Auto percepção da saúde entre usuários da Atenção Primária em Porto Alegre, RS. *RBMFC.* 2010;5(17):9-15.
12. Silva TR, Menezes PR. Auto percepção de saúde: um estudo com idosos de baixa renda de São Paulo. *Rev Med.* 2007;86(1):28-38.
13. Pavão ALB, Werneck GL, Campos MR. Autoavaliação do estado de saúde e a associação com fatores sociodemográficos, hábitos de vida e morbidade na população: um inquérito nacional. *Cad Saúde Pública.* 2013;29(4):723-34.
14. Borim FSA, Barros MBA, Neri AL. Autoavaliação da saúde em idosos: pesquisa de base populacional no Município de Campinas, São Paulo, Brasil. *Cad Saúde Pública.* 2012;28(4):769-80.
15. Jerez-Roig J, Souza DLB, Andrade FLJP, Lima Filho BF, Medeiros RJ, Oliveira NPD, et al. Self-perceived health in institutionalized elderly. *Ciênc Saúde Colet.* 2016;21(11):3367-75.
16. Ocampo-Chaparro JM, Zapata-Ossa HJ, Cubides-Munévar AM, Curcio CL, Villegas JD, Reyes-Ortiz CA. Prevalence of poor self-rated health and associated risk factors among older adults in Cali, Colombia. *Colomb Med.* 2013;44(4):224-31.
17. Damián J, Pastor-Barriuso R, Valderrama-Gama E. Factors associated with self-rated health in older people living in institutions. *BMC Geriatrics.* 2008;8(5).
18. Sereny MD, Gu D. Living arrangement concordance and its association with self-rated health among institutionalized and community-residing older adults in China. *J Cross Cult Gerontol.* 2011;26(3):239-59.
19. Camurça R, Vasconcelos GH, Almeida MS, Silva MV, Veloso LSG. Correlação entre a capacidade funcional e auto percepção de saúde por idosos do município de São Bento/PB. In: Congresso Internacional de Envelhecimento Humano; 2013; Campina Grande; 2013.
20. Bertoldi AD, Barros AJD, Hallal PC, Lima RC. Drug utilization in adults: prevalence and individuals determinants. *Rev Saúde Pública.* 2004;38(2):228-38.
21. Bardel A, Wallander MA, Svärdsudd K. Reported current use of prescription drugs and some of its determinants among 35 to 65-year-old women in mid-Sweden: a population-based study. *J Clin Epidemiol.* 2000;53:637-43.
22. Pagotto V, Bachion MM, Silveira EA da. Autoavaliação da saúde por idosos brasileiros: revisão sistemática da literatura. *Rev Panam Salud Pública.* 2013;33(4):302-10.