DEPRESSIVE SYMPTOMS AND ASSOCIATED FACTORS IN RESIDENTS LIVING IN LONG-TERM CARE FACILITIES FROM THE METROPOLITAN AREA OF BELO HORIZONTE

Sintomas depressivos e fatores associados em idosos institucionalizados da região metropolitana de Belo Horizonte

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ABSTRACT

OBJECTIVE: To identify the presence of depressive symptoms and its association with self-rated health among older adults living in Long-term Care Facilities. **METHODS:** This is a cross-sectional study in which older adults living in LTCF were screened by using the Mental State Mini Exam. Standard questionnaires were used to collect the following data: 1) sociodemographic variables, 2) depressive symptoms, and 3) self-rated health. The descriptive statistical analysis by measures of central tendency and dispersion was performed to characterize the sample. The multinomial logistic regression analysis was performed to associate the variables. In all tests, the alpha value of 0.05 was considered. **RESULTS:** A total of 127 older adults living in 47 long-term care facilities were evaluated. Among those who presented depressive symptoms, 32.3% were classified as having mild symptoms and 13.4% had severe symptoms. Regarding self-rated health, 46.5% considered it poor/very poor. In the analysis of the association between mild and severe depressive symptoms and self-rated health, statistical significance ($p = 0.004$ and $p = 0.001$, respectively) was found. **CONCLUSIONS:** The results of this study suggest that more attention should be directed to older adults living in LTCF who have symptoms of depression and to their impacts on the negative self-rated health. **KEYWORDS:** aged; homes for the aged; depression.

RESUMO

OBJETIVO: Identificar a presença de sintomas depressivos e sua associação com a autopercepção de saúde em idosos residentes em instituições de longa permanência. **METODOLOGIA:** Estudo transversal que avaliou idosos institucionalizados após triagem realizada pelo minixame do estado mental. Aplicaram-se questionários padronizados para a coleta de variáveis sociodemográficas, sintomas depressivos e autopercepção de saúde. Análise estatística descritiva por meio de medidas de tendência central e dispersão foram realizadas para caracterização da amostra. Para associação entre as variáveis, realizou-se análise de regressão multinomial simples. Em todos os testes, considerou-se o valor de alfa igual a 0,05. **RESULTADOS:** Avaliaram-se 127 idosos residentes em 47 instituições de longa permanência. Dentre aqueles que apresentaram sintomas depressivos, 32,3% foram caracterizados como leves e 13,4% com sintomas graves. Em relação à autopercepção de saúde, 46,5% consideraram sua saúde ruim/muito ruim. Na análise da associação entre sintomas depressivos leves e graves e autopercepção de saúde, observou-se significância estatística de $p = 0,004$ e $p = 0,001$, respectivamente. **CONCLUSÕES:** Os resultados deste estudo sugerem a necessidade de atenção ao cuidado com os idosos institucionalizados que apresentam sintomas depressivos e seu impacto na autopercepção negativa da saúde. **PALAVRAS-CHAVE:** idoso; instituição de longa permanência para idosos; depressão.

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Received on: 06/26/2020 Accepted on: 08/25/2020

<https://doi.org/10.5327/Z2447-212320202000078>

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INTRODUCTION

In the early 2000s, Brazil became a country characterized by its middle-aged population, this aging being explained by the increase in life expectancy and the decrease in the fertility rate.¹ According to data from the Brazilian Institute for Geography and Statistics (IBGE), in 2012, the Brazilian population aged 60 or over corresponded to 12.8%. In 2019, this number increased to 15.7% in Brazil and 16.7% in the state of Minas Gerais.²

The increase in the Brazilian population of older adults rapidly occurred and reflected in the increased demand for social assistance and healthcare services. The overload of services and the need for long-term care for older adults, due to their loss of functional independence and autonomy, often result in social isolation for these individuals, generally with decreased support for continuing family care.³

A survey conducted in 2010 showed that about 1% of the older adult population in Brazil (84 thousand people) lives in long-term care facilities for older adults (LTCF); in the state of Minas Gerais, 0.8% live in LTCF.⁴ Most older adults living in these institutions are frailer. Nevertheless, the care provided for older people at LTCF is usually limited to shelter and food.⁵ Socially-isolated older people become more inactive and, consequently, with greater health problems.⁶ It is noteworthy that institutionalization increases vulnerability and the occurrence of depressive conditions.⁷

According to Bretanha et al.,⁸ older adults who have more depressive symptoms are older, women, with poor self-rated health, single, and with low education level and income. According to the literature, the negative self-rated health is directly related to depressive symptoms, in addition to other factors such as the use of many medications, socioeconomic status, and personal relationships.⁷

Considering the need for understanding the symptoms of depression and the self-rated health of older adults living in LTCF in order to develop new strategies that favor health promotion and prioritize the maintenance of functionality, the objective of this study was to identify the presence of depressive symptoms and their association with self-rated health in residents who live in LTCF in the metropolitan area of Belo Horizonte (state of Minas Gerais, Brazil).

METHODS

This is a descriptive, observational, cross-sectional study that evaluated older adults living in LTCF in Belo

Horizonte and municipalities in the metropolitan area of Belo Horizonte (MABH) between September 2016 and July 2017. This study was approved by the Research Ethics Committee of Pontifícia Universidade Católica de Minas Gerais (PUC Minas), under protocol No. 817 (CAAE: 3147114.4.0000.5137) and was funded by Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq) (process No. 456804/2014-5) and by Fundo de Incentivo à Pesquisa (FIP) – PUC Minas (No. 1st/2017-378-S1).

The study unit was represented by LTCF and residents living in care homes. For sample calculation, simple random sampling in two stages was employed: first, the number of LTCF existing in the MABH that agreed to participate in the study was identified, and subsequently the number of older adults in each of these institutions. The sample included all MABH municipalities that agreed to participate and had at least one LTCF. Of the 170 LTCF existing in the MABH at the time of data collection, 156 agreed to participate in the research. Hence, according to the sample calculation, 44 institutions were selected, of which 28 were philanthropic and 16, private. In municipalities that had only one LTCF, such were automatically selected; in others with more than one LTCF, the number of LTCF was defined considering the proportion of older adults living in LTCF. Thus, considering the total of 625 older people residing in these institutions at the time of the study; a 58% prevalence for quality of life, as assessed by the WHOQOL-BREF instrument (World Health Organization Quality of Life-Bref), which was found based on a pilot study carried out by the research team on 23 older adults living in LTCF, a estimation error of 10%, and a 90% confidence level, a minimum sample of 119 older people was established. The sample was calculated using the Stata software, version 12.0. Considering the fieldwork routines and the need for replacing LTCF that presented impediments to last-minute interviews, the final sample accounted for 47 LTCF.

The inclusion criteria were: aged over 60 years, not having cognitive impairment, as screened by the Mini Mental State Examination (MMSE), and having an interest in voluntarily participating in the study.

After selecting the LTCF, the resident was selected and an Informed Consent Form was obtained, followed by the application of the MMSE, the instrument used for screening. The employed cutoffs were those proposed by Bertolucci et al.,⁹ taking into account the education level.

Variables and measures

As for sociodemographic variables, the following were evaluated:

- sex (men or women);
- age, which was grouped into four groups (60–69, 70–79, 80–89, or > 90 years);
- marital status (single, married, widower, or divorced);
- time residing in the institution, categorized into four groups (up to 5 years, from 5 to 10 years, between 10 and 15 years, and > 15 years);
- education level (the following categories were established: illiterate, up to 8 years of formal education, from 8 to 14 years of formal education, and from 14 to 16 years of formal education).

Regarding depressive symptoms, the Geriatric Depression Scale (GDS-15) was applied, developed by Sheikh and Yesavage in 1986, which is widely used to identify symptoms of depression in older adults. The 15 items of the scale have good diagnostic accuracy, with adequate reliability, specificity, and sensitivity. It is a scale of easy application, considering its dichotomous format (yes/no).¹⁰ The result of 6 or more points indicates depressive symptoms, considering 6 to 10 points as mild symptoms and equal to or greater than 11 points, severe symptoms.¹¹

Regarding self-rated health, individuals were asked: “How do you evaluate your health in general?”, with five response alternatives (very poor, poor, fair, good, and very good).¹²

Data analysis

Analyses were performed using the Stata software (Stata Corporation, College Station, Texas) version 12.0, considering a 5% level of significance. The descriptive statistical analysis was carried out by measures of central tendency and dispersion in order to characterize the sample. The multinomial logistic regression analysis was performed to associate the variables. In all tests, the alpha value of 0.05 was considered.

RESULTS

The MMSE was applied to 328 older adults, and 201 of them failed it. Thus, the 127 older adults participants in the study lived in 47 LTCF, 62.20% of them were philanthropic, 20 were located in the city of Belo Horizonte, and 27 in other municipalities of the MABH. The average age of the evaluated individuals was $74.92 \pm$

8.85 years, and 51.18% of them were men. Table 1 shows the residents' sociodemographic variables.

According to the results, 54.34% of older adults did not have depressive symptoms, 32.28% had mild symptoms, and 13.38% had severe symptoms. Of those with depressive symptoms, 53.44% were women.

Regarding self-rated health, 53.54% reported that their health was very good/good and 46.46% said it was poor/very poor.

In the analysis of the association between mild depressive symptoms (GDS = 6–10) and self-rated health, statistical significance ($p = 0.004$) was observed. These results indicate that older people with fair/poor self-rated health were 3.23 times more likely to have mild depressive symptoms (GDS = 6–10) than older adults with good/very good self-rated health, as verified in Table 2.

Conversely, for older adults with severe depressive symptoms (GDS = 11–15), those with fair/poor self-rated health were 10.67 times more likely to have severe depressive symptoms than people with good/very good self-rated health, as demonstrated in Table 3.

Table 1. Sociodemographic characteristics of older adults living in long-term care facilities (n=127).

Variables	Frequency n (%)
Age (years)	
60 - 69	41 (32.28)
70 - 79	47 (37.01)
80 - 89	31 (24.41)
Over 90	8 (6.30)
Marital status	
Single	55 (43.30)
Married	21 (16.54)
Widower	27 (21.26)
Divorced	24 (18.90)
Institutionalization time (years)	
0 — 5	88 (69.29)
5 — 10	22 (17.32)
10 — 15	7 (5.52)
Over 15	10 (7.87)
Education level (years)	
0	34 (26.77)
1 — 8	79 (62.20)
8 — 14	8 (6.30)
14 - 16	6 (4.73)

Table 2. Multinomial logistic regression analysis with mild depressive symptoms as a dependent variable (n=41).

Variables	GDS	OR (95%CI)
	6-10	
	n (%)	
Marital status		
Single	18 (43.90)	1.00 (-)
Married/Common-law marriage	11 (26.83)	2.22 (0.75–6.55)
Widower	09 (21.95)	0.91 (0.33–2.48)
Divorced/Separated	03 (7.32)	0.30 (0.08–1.18)
Age group (years)		
60 - 69	14 (34.15)	1.00 (-)
70 - 79	15 (36.59)	1.03 (0.41–2.63)
80 - 89	11 (26.83)	1.05 (0.37–2.92)
Over 90	01 (2.43)	0.27 (0.03–2.50)
Education level (years)		
0	17 (41.46)	1.00 (-)
1 — 8	20 (48.78)	0.32 (0.13–0.78)
8 —14	01 (2.44)	0.15 (0.02–1.47)
14 - 16	03 (7.32)	0.77 (0.13–4.43)
Self-rated health		
Good/Very good	17 (41.46)	1.00 (-)
Fair/Poor	24 (58.54)	3.23 (1.44–7.22)

GDS: 0-5 no symptoms; 6-10 mild symptoms; 11-15 severe symptoms; OR: *Odds Ratio*; IC95%: intervalo de confiança de 95%.

Table 3. Multinomial logistic regression analysis with severe depressive symptoms as a dependent variable(n=18).

Variables	GDS	OR (95%CI)
	11-15	
	n (%)	
Marital status		
Single	9 (50.00)	1.00 (-)
Married/Common-law marriage	2 (11.10)	0.91 (0.16–5.14)
Widower	2 (11.10)	0.45 (0.09–2.40)
Divorced/Separated	5 (27.78)	1.13 (0.32–4.05)
Age group (years)		
60 - 69	7 (38.89)	1.00 (-)
70 - 79	6 (33.33)	0.72 (0.21–2.48)
80 - 89	4 (22.22)	0.53 (0.12–2.36)
Over 90	1 (5.56)	0.50 (0.05–4.90)
Education level (years)		
0	4 (22.22)	1.00 (-)
1 — 8	12 (66.66)	0.75 (0.20–2.73)
8 —14	2 (11.11)	1.30 (0.18–9.48)
14 - 16	0 (0)	0.00 (-)
Self-rated health		
Good/Very good	3 (16.67)	1.00 (-)
Fair/Poor	15 (83.33)	10.67 (2.77–41.07)

GDS: 0-5 no symptoms; 6-10 mild symptoms; 11-15 severe symptoms; OR: *Odds Ratio*; IC95%: intervalo de confiança de 95%.

DISCUSSION

In the present study, most older adults lived in philanthropic LTCF, were men, aged between 70 and 79 years, and were single. In addition, they lived in the institution for less than five years and had education level of up to eight years of formal education. Those with mild (32.28%) and severe (13.38%) depressive symptoms had worse self-rated health.

As aforementioned, most of the participating institutions were philanthropic, with the majority of income for their maintenance provided by the residents and considered insufficient to do so, considering that most of them are retired, with monthly income of one minimum wage. These data reflect the census survey carried out by Camarano and Kanso,¹³ according to which 65.2% of Brazilian institutions are philanthropic.

Regarding sex, there is a predominance of men, which may have occurred due to the sample allocation bias, considering that older adults were selected regardless of sex. In addition, women show greater cognitive impairment.¹⁴ Thus, the eligibility criterion may have excluded older women from the study. In the census survey carried out in Brazil by Camarano and Kanso,¹³ a higher prevalence of women (57.3%) was found among the total number of older adults living in LTCF, taking into account that women have a higher life expectancy range, about five to seven years more than men.^{15,16} Thus, the greater number of men in the present study may have influenced the results.

The average age in this study was 74.92 ± 8.85 years, and most of the older adults were single (43%). Moreover, a minority of older adults lived in the institution for more than 5 years. Increased age, single marital status, and multiple morbidities are the main causes for the institutionalization of older adults.^{17,18} However, as for marital status, widowed older adults are more frequent in studies,^{19,20} because old age and widowhood are predictors of institutionalization.¹⁹

Low education level is also frequently reported when evaluating philanthropic institutions, such as in the present study, considering that most institutions were philanthropic and 62% of older adults had up to eight years of formal education, which is in line with the study conducted by Güths et al.,¹⁹ in which 65% of individuals had up to four years of formal education (elementary school).

Regarding depression, there is a high percentage of depressive symptoms among the older adults evaluated. Depressive symptoms are commonly associated with the presence of multiple factors, such as poor health,

abandonment, widowhood, and institutionalization, which are related to the forms of neglect and abandonment prior to institutionalization, but also within institutions, whether due to prejudices against older adults, the negative perspective of old age, or the infantilization and depersonalization of those who receive them.^{21,22} Other studies have also demonstrated a high occurrence of depressive symptoms when evaluating residents living in LTCF in Brazilian municipalities.^{7,23} These authors point to institutionalization itself as one of the main factors of depression in older adults,²³ associated with the difficulty in developing bonds and the lack of privacy as criteria that predispose to depression.⁷ In addition, the study of Damaceno et al.²⁴ presents aspects that corroborate the social representation of care for older adults living in LTCF, associated with basic care, such as feeding, conversation, and bathing, diminishing them by disregarding important concepts, such as co-responsibility of the subject and encouraging autonomy, without managers' and professionals' consideration for older adults as active subjects in the care process, which can have repercussions in the manifestation of depressive symptoms.

Other studies available in the literature indicate that depressive symptoms are more frequent among women. In the present study, 53.44% of the older adults with depressive symptoms were women. This fact may be explained by the low level of estrogen, which increases the risk of depression in older women.²⁵

Self-rated health is an important indicator of quality of life and is predictive of survival. It is worth noting that the way older adults deal with their health directly impacts behavior, way of living as well as their choices.²⁶ In this study, 46.46% rated their health as poor/very poor, which is similar to the study performed by Guimarães et al.⁷, who evaluated older adults living in LTCF in the municipality of Jequié (state of Bahia, Brazil), where 61.5% of them rated their health likewise. Polypharmacy, precarious economic situation, and discontent with personal relationships are also criteria that interfere with negative self-rated health.⁷

In the performed analyses, marital status and age group were not associated with depressive symptoms, corroborating the findings of Guimarães et al.,⁷ who also evaluated residents living in LTCF.

On the other hand, education level was associated with depressive symptoms, which was also observed in the epidemiological study of Borges et al.²⁷ carried out on community-dwelling older adults from Florianópolis. As expected, older adults with a high level of education have

lower risk of presenting depressive symptoms, emphasizing that high level of education is a protective factor for the onset of depressive conditions.

Depressive symptoms were associated with poor/very poor self-rated health. According to the results, poor/very poor self-rated health increases the chances of mild depressive symptoms by 3.23 times than in individuals with good/very good self-rated health. Conversely, older adults with negative self-rated health (poor/very poor) are 10.27 times more likely to have severe depressive symptoms. The study carried out by Ramos et al.,²⁸ who evaluated community older adults living in northern Minas Gerais, demonstrated that they were 2.12 times more likely to manifest depressive symptoms when the self-rated health was poor/very poor. For Borges et al.,²⁷ factors that influence the onset of depressive symptoms may interfere with self-rated health, or the very report of negative health.

CONCLUSION

The results of this study indicate that the presence of depressive symptoms is a frequent finding among older adults living in LTCF and that negative self-rated health is associated with the presence of these symptoms. Therefore, it is extremely important to know the variables that interfere with depressive symptoms in older adults, in such a way to make interventions to reduce symptoms as well as their complications. Furthermore, LTCF should be aware of the importance of using standardized instruments to help identify this condition.

Especially in the context of long-term care facilities, the adoption of initiatives for welcoming older people, from the moment of their admission – by making the environment

friendly and concerning the relationship with family members of these people – to measures implemented to maintain physical and cognitive functionality and activities that impact quality of life may have repercussions on self-rated health and risks of depression. Moreover, the need for implementing measures in the macro-political context is highlighted, by carrying out actions established in the existing public policies on the care for older people and in the articulation of long-term care policies aimed at this population.

CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

FUNDING

The study was funded by Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq) (No. 456804/2014-5) and by Fundo de Incentivo à Pesquisa (FIP) – Pontifícia Universidade Católica de Minas Gerais (No. 1st/2017-378-S1).

AUTHORS' CONTRIBUTION

PC: conceptualization, data curation, investigation, writing — original draft, and writing — review and editing. CV: formal analysis, supervision, writing — original draft, writing — review and editing. TTBL: conceptualization, formal analysis, funding acquisition, methodology, resources, writing — review and editing. MCMRS: conceptualization, writing — review and editing. LPL: supervision, writing — review and editing. NCH: conceptualization, funding acquisition, project administration, resources, writing — review and editing.

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