

# Prevalence of depressive symptoms and associated factors among institutionalized elderly

Prevalência de sintomatologia depressiva e fatores associados entre idosos institucionalizados

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## Keywords

Geriatric nursing, Nursing assessment; Aging; Aged; Depression; Prevalence

## Descritores

Enfermagem geriátrica; Avaliação em enfermagem; Envelhecimento; Idoso; Depressão; Prevalência

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## Abstract

**Objective:** Determining the prevalence of depressive symptoms and associated factors in institutionalized elderly.

**Methods:** Cross-sectional study that included 211 elderly from Brazil and 342 from Portugal, all residing in long-stay institutions. The survey instrument was the Geriatric Depression Scale.

**Results:** The prevalence of depressive symptoms was found among 49.76% of the elderly in Brazil and in 61.40% of the Portuguese seniors. The Brazilian elderly with depressive symptomatology have the single marital status, low number of years of study and gender as main associated factors. Among the Portuguese elderly, the main associated factor was the age over 70 years.

**Conclusion:** The prevalence of depressive symptoms was high and its early recognition may contribute to the quality of life of institutionalized elderly.

## Resumo

**Objetivo:** Conhecer a prevalência da sintomatologia depressiva e fatores associados em idosos institucionalizados. Métodos: Estudo transversal que incluiu 211 idosos brasileiros e 342 idosos portugueses, residentes em instituições de longa permanência. O instrumento de pesquisa foi a Escala de Depressão Geriátrica.

**Resultados:** A prevalência de sintomatologia depressiva encontrada foi 49,76% entre idosos brasileiros e 61,40% em portugueses. Idosos brasileiros com sintomatologia depressiva têm como principais fatores associados o estado civil solteiro, o baixo número de anos de estudo e o sexo. Entre idosos portugueses o principal fator associado foi a idade maior do que 70 anos.

**Conclusão:** A prevalência da sintomatologia depressiva foi alta e o seu reconhecimento precoce pode contribuir para a qualidade de vida e idosos institucionalizados.

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## Introduction

Population aging is a global reality that is happening in different countries, including Brazil and Portugal, although each of these countries is at different stages of this transition. Thus, within a few years we will have more people aged over 60 years, with a larger number of people reaching older ages, exceeding the life expectancy predicted by experts.<sup>(1)</sup>

The World Health Organization considers as elderly in developing countries any person older than 60 years, and in developed countries, people aged over 65 years.<sup>(2)</sup> According to the same source, there is a statistical forecast for 2025 of an elderly population of 1.2 billion people in the world. A curious fact is that the older population, those aged over 80 years, will be the fastest growing age group.

According to the Brazilian Institute of Geography and Statistics (IBGE - Instituto Brasileiro de Geografia e Estatística),<sup>(3)</sup> the Brazilian population is 190,732,694 people, with about 10% aged over 60 years. Life expectancy for women is 77 years and for men is 69.4 years. According to the National Institute of Statistics, in Portugal<sup>(4)</sup> there are 10,561,614 inhabitants, among which 19% are elderly. The European country has a life expectancy of 81.8 years for women and of 75.8 years for men.

The strategy for health promotion aimed at the aging population in Brazil is supported by the National Health Policy for the Elderly.<sup>(5)</sup> And in Portugal, through the National Programme for the Health of the Elderly.<sup>(6)</sup> Due to the increasing number of elderly and the difficulties faced by families in the task of caring (related to changes in family structure, such as the emergence of smaller families and an increasing individual mobility because of work obligations), arises the necessity for Institutions for the Aged, which are places of comprehensive care for older people who are unable to stay with their families or in their own homes.

The aging process causes changes in the pattern of diseases and in the frequency of disabilities.<sup>(7)</sup> The physical, cognitive and sensory functions are weakened, leading to deterioration of functional abilities.<sup>(8)</sup> Therefore, a high prevalence of mental

disorders is noticeable at the old age, among which predominates the depression.<sup>(9)</sup>

According to the literature, depression is common in old age, but contrary to popular opinion, is not part of the natural aging process. In most cases, depression is underdiagnosed and undertreated. It is observed that among institutionalized elderly, depression often remains undiagnosed and untreated, especially in institutions without a team of professionals with knowledge and skills to identify patients at risk. Hence, the necessity to enable these professionals to recognize the most common ways in which the depressive syndromes are presented.<sup>(10)</sup> Thus, in relation to affective disorders, depression imposes itself as the most frequent in the elderly, currently becoming the leading cause of disability worldwide. According to Apóstolo et al.,<sup>(11)</sup> depression is responsible for 6.2% of the morbidity rate in the European region of the World Health Organization.

Considering the increase of the elderly population worldwide, we understand the need for studies involving different countries, in order to track changes and possible differences in the dynamics of aging. Thus, enabling improvements in the life condition of the elderly.

Based on the above, this study was carried out in two different scenarios, assessing the elderly in a Latin American developing country and in a developed European country, aiming at evaluating and comparing the depressive symptoms and socio-demographic factors among institutionalized elderly in Brazil and Portugal. The hypothesis was that the comparative analysis would enable knowing the greater or lesser proximity of the two countries regarding the prevalence of depressive symptoms and associated factors, inferring if these can serve as indicators of trends or not. I.e., under a specific parameter, the analysis should permit evaluating the current demographic and epidemiological transition stage of Brazil in relation to Portugal.

This study aimed at knowing the prevalence of depressive symptoms and socio-demographic factors in institutionalized elderly.

## Methods

This is a cross-sectional study carried out in two scenarios: the city of Recife, northeastern Brazil and the city of Coimbra, in Portugal. The sample consisted of 211 Brazilian seniors and 342 Portuguese seniors aged over 60 years and residents of long-stay institutions. The proportional stratified sampling technique was used to select the sample, allowing the choice of its components depending on the actual distribution of strata in the population.

Data collection was obtained through interviews with socio-demographic features and the Geriatric Depression Scale of 15 items. The interviews with the Portuguese population were conducted by researchers at the Research Unit in Health Sciences: Nursing, of the Escola Superior de Enfermagem de Coimbra. For the Brazilian population, the interviews were conducted by researchers of the Research Group – Health of the Elderly of the Universidade Federal de Pernambuco.

The presence of depressive symptoms was assessed using the Geriatric Depression Scale with 15 items, a short version of the original scale.<sup>(12-14)</sup>

The Geriatric Depression Scale with 15 items is one of the most used tools for detecting depression in the elderly. Several studies have shown that this scale provides valid and reliable measures for the assessment of depressive disorders, thus justifying its choice. The cutoff used for suspected depression was  $> 5$ .

The Statistical Package for the Social Sciences, version 16.0 was used for data management. After data collection, the information was entered into a database of the statistical program. First, the data were descriptively analyzed with dispersion measures for the numeric variable of age. Tables and graphs were generated for the subsequent bivariate analysis in each of the countries, considering the depressive symptoms as the dependent variable. After checking the associations, the profile analysis was done only of respondents with depressive symptoms. In order to define the most important features, a classification/decision tree was generated based on the origin of the respondents, i.e., Brazil or Portugal,

through computer simulations, using the aforementioned statistical tool.

The development of study followed the national and international standards of ethics in research involving human beings.

## Results

Using the chi-square test to assess the association between the dependent variables and depressive symptoms in each country separately, and considering a significance level of 5%, the table 1 shows that in Brazil the hypothesis of independence of depressive symptoms in relation to gender and age was rejected. When evaluating the results of the same statistical tests in Portugal, the hypothesis of independence of depressive symptoms with any of the variables was not rejected.

As the p-value of the Pearson's chi-squared test for the intersection between the depressive symptoms variable and the country of respondents was lower than 0.05 (5%), we can consider there is an association between them. For this reason, we performed an analysis to define the profile of the elderly with depressive symptoms in each country.

It is noteworthy that the percentage distribution of each category of the analyzed variables is different when considering Brazil and Portugal separately. (Table 2)

In order to assess the main characteristics of elderly patients with depressive symptomatology in Brazil and Portugal and recommend an appropriate classification, a decision/classification tree was proposed using the Statistical Package for the Social Sciences version 16.0. The growth algorithm chosen was the "EXHAUSTIVE CHAID," which is a variation of the standard algorithm "CHAID" that is based on the existing associations in each of the growth steps, through the Pearson's chi-squared test.

At the first level, it is noted the separation by marital status: most seniors with depressive symptomatology in Brazil (54 cases) was observed in the category of singles, while in Portugal most respondents (183 cases) are widowed or maintain stable relationships.

**Table 1.** Factors associated with depressive symptoms

Variables	Country			
	Brazil Frequency (%)	p-value	Portugal Frequency (%)	p-value
Gender				
Female	147(69.67)	0.0	215(62.87)	0.82
Male	64(30.33)	0.21	127(37.13)	
Age				
60   - 70 years	61(28.91)		24(7.02)	0.96
70   - 80 years	72(34.12)	0.18	85(24.85)	
80   - 90 years	57(27.01)		176(51.46)	
90 and over	21(9.95)		57(16.67)	
Marital status				
Married/ Living with partner	18(8.53)		70(20.47)	0.86
Single	113(53.55)		44(12.87)	
Widowed	55(26.07)	0.08	161(47.08)	
Separated/ Divorced	24(11.37)		67(19.59)	
Not informed	1(0.47)		0(0.00)	
Years of education/study				
01   - 05	86(40.76)		219(64.04)	0.61
05   - 09	28(13.27)		15(4.39)	
09   - 12	17(8.06)		11(3.22)	
12 or more	8(3.79)		6(1.75)	
None/Unknown/Not informed	72(34.12)		91(26.61)	
Depressive symptomatology				
With	105(49.76)		210(61.40)	
Without	106(50.24)		132(38.60)	

At the second level, when it comes to Brazil, most of the respondents with depressive symptoms is illiterate or has few years of study (32 cases), while in Portugal, in the second level of the tree, most of the elderly is older than 70 years (171 cases).

It is only at the third level that the Portuguese elderly appear to be more sensitive to the few years of study (81 cases) and the Brazilians with respect to the female gender (13 cases). Brazilian elderly with depressive symptomatology have as main associated factors, the single marital status, the few years of study and gender. In contrast, the Portuguese elderly have as main factors associated with depressive symptoms not belonging to the single marital status and age older than 70 years. Education, which appears as the second most important characteristic among Brazilians, is the third strongest among the Portuguese elderly.

**Table 2.** Positive depressive symptomatology

Variables	Country	
	Brazil Frequency (%)	Portugal Frequency (%)
Gender		
Female	85(81.0)	131(62.4)
Male	20(19.0)	79(37.6)
Age		
60   - 70 years	29(27.6)	15(7.1)
70   - 80 years	33(31.4)	54(25.7)
80   - 90 years	28(26.7)	107(51.0)
90   -	15(14.3)	34(16.2)
Marital status		
Married/ Living with partner	7(6.7)	41(19.5)
Single	54(51.4)	27(12.9)
Widowed	27(25.7)	98(46.7)
Separated/ Divorced	17(16.2)	44(21.0)
Years of education/study		
01   - 05	42(40.0)	141(67.1)
05   - 09	9(8.6)	8(3.8)
09   - 12	7(6.7)	7(3.3)
12 or more	3(2.9)	3(1.4)
None/Not informed	44(41.9)	51(24.3)

In order to verify if the age of respondents with depressive symptoms was the same in the two countries, the t-test was applied to determine the equality of means. The Brazilian mean obtained was of 81.14 years and the Portuguese mean was of 82.22 years. The statistical test generated a p-value of 0.6855, i.e., considering a significance level of 5%, there is no statistical evidence that the mean ages among patients of Brazil and Portugal are different.

Therefore, in the studied sample the most important factor for Brazilian respondents was the marital status, assuming that singles seem to be at higher risk of depression, while in Portugal, being single does not appear to be a risk factor as significant, if compared to Brazil. The average age of the respondents in both countries was statistically the same, but the majority of Portuguese respondents

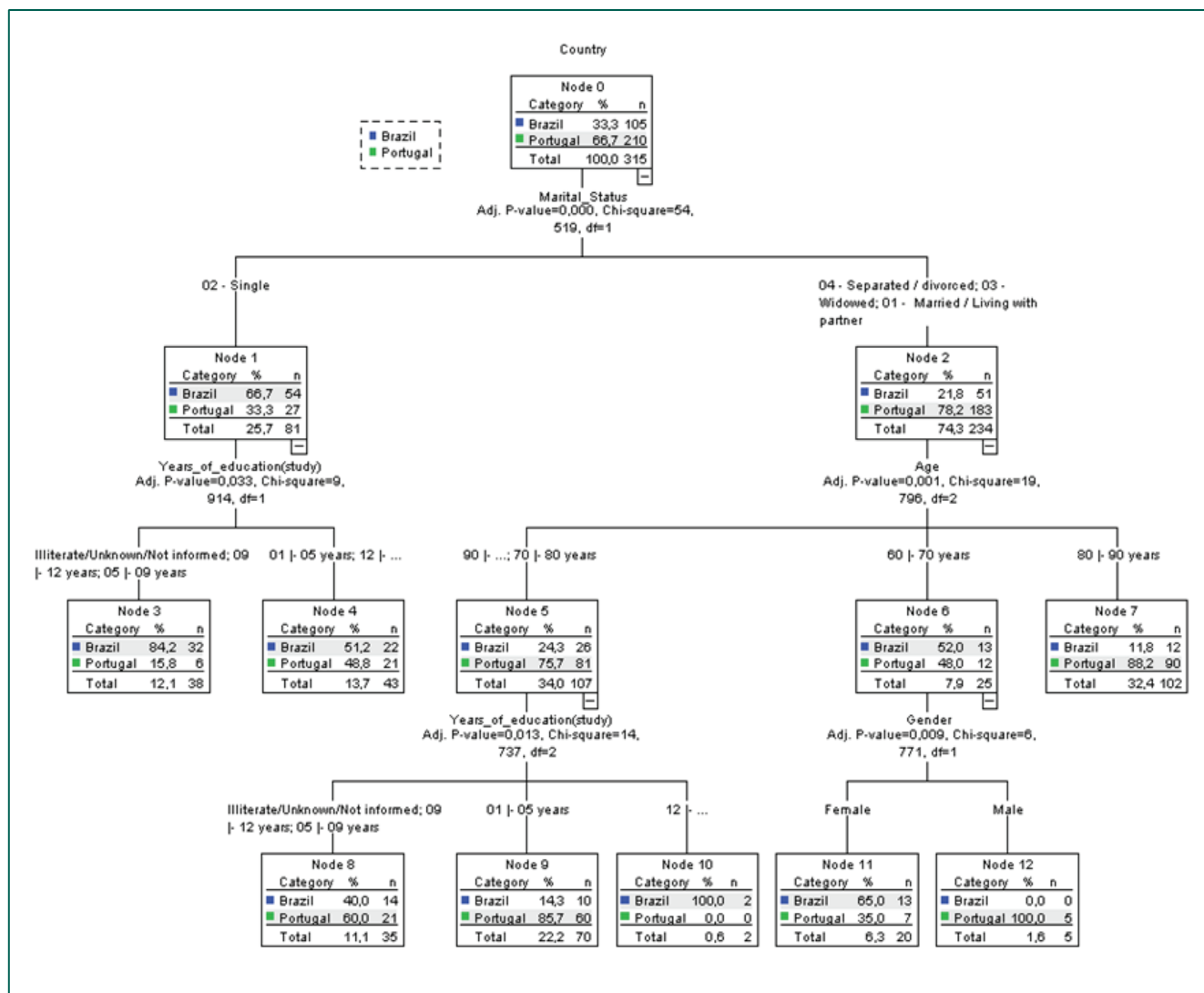


Figure 1. Classification/decision tree

with depression was aged between 70 and 90 years, whereas, among Brazilians, the distribution was more uniform in the various categorizations of age (Figure 1).

## Discussion

The limitations of this study results are related to the cross-sectional design that does not allow establishing relations of cause and effect.

The importance of the results obtained for nursing professionals together with the health team is noteworthy. Acquiring knowledge about the aging process and the diseases that can affect the elder-

ly, including depression, makes these professionals more alert, in the sense of identifying the needs of the elderly, minimizing the existing difficulties and favoring a better quality of life.

Regarding gender, the sample of institutionalized elderly, both in the cities of Recife and Coimbra, showed a higher percentage of women, of 69.67% and 62.87% respectively, which is the same data found in other studies, reinforcing the feminization of ageing.<sup>(15,16)</sup>

Regarding the age factor, it was observed that in Recife the highest prevalence was found in the age group of 70-80 years (34.12%) and that, in Coimbra, it was between 80 and 90 years (51.46%), which corresponds to a higher life expectancy in de-



veloped countries. According to data from the Brazilian Institute of Geography and Statistics,<sup>(3)</sup> life expectancy for women is 77 years and for men, 69.4 years. In Portugal, the National Institute of Statistics<sup>(4)</sup> has a life expectancy of 81.8 years for women and of 75.8 years for men. These differences, however, do not hide the common trend for both countries of institutionalization occurring at older ages.

In relation to marital status, the single and widowed participants of Brazilian institutions reached a percentage of 79.62%, while in Portugal the widowed and separated/divorced participants reached 66.65%. The result corroborates other studies and justifies the search for these institutions at that time of life when finding oneself alone. This search may also occur as a personal initiative, often due to external pressures, fear of urban violence, exclusion of the family, and especially for believing in the quality of care provided in Long-Stay Institutions for the Elderly.<sup>(15,17)</sup>

Considering the level of education of the participants, we found that the two groups have low level of education: a high percentage, of approximately 74.88% of Brazilians and 90.65% of Portuguese, have up to 5 years of study. We can consider that the low level of education of institutionalized elderly is probably due to the difficulty of access to education experienced a few decades ago, especially for women.<sup>(16,18,19)</sup>

We believe that the institutionalization of the elderly can be a potentiating condition of depression, because by living in this new environment, isolated from their social life and away from their families, they need to adapt to all these changes. According to Salgueiro,<sup>(20)</sup> the elderly leave their homes, no longer have their own time, lose their autonomy and become dependent on third parties, which could trigger depressive states. Thus, we find in national and international scientific literature a high prevalence of depression in institutionalized elderly.

Regarding the Brazilian institutionalized elderly, the prevalence of depressive symptoms is equivalent to 49.76%, a result that approaches other studies such as the one by Soares et al.,<sup>(16)</sup> that obtained an extremely high prevalence of 73.7% in institutionalized elderly, as well as the study by Maciel and Guerra,<sup>(21)</sup> with a prevalence of depressive symptoms of 25.5% for non-institutionalized elderly.

The prevalence of depressive symptoms in the Portuguese studied population was 61.40%. These values corroborate several studies, including the one by Vaz and Gaspar,<sup>(15)</sup> with prevalence of 47%. The information suggests that living in institutions probably requires actions that plan the comprehensive attention to the elderly more effectively, making it necessary to train the technical team who is responsible for the care. We emphasize that in addition to technical skills, we can not fail to encourage these professionals to cultivate a more human look to the limitations of the elderly. They must be reminded that caring is an act of love.

Analyzing these data, we can corroborate the national and international studies, in which the number of institutionalized elderly with depressive symptoms is high, ranging from 25% to 80%.

For Brazilian institutionalized elderly, the single marital status is a risk factor in relation to depressive symptoms. This fact is rarely discussed because in most studies, what is observed are gender issues, education and economic factors, i.e., an increased risk among women of low income and low education.<sup>(14,21)</sup> The environment of long-stay institutions provides challenges to residents and may favor the development of depressive symptoms. Therefore, the awareness of the diagnosis of depression in the institutional context by the technicians responsible for the care is of fundamental importance. The recognition of depression in the elderly should contribute to the development of strategies, favoring the effectiveness of treatment and, consequently, improving the Quality of Life of the Elderly.

## Conclusion

The prevalence of depressive symptoms was high and its early recognition may contribute to the quality of life of institutionalized elderly.

## Collaborations

Leal MCC and Apóstolo JLA contributed to the project design, study execution, analysis and interpretation of data, drafting the article and final approval of the version to be published. Mendes AMOC and Marques APO contributed to the proj-

ect design, drafting the article and critical revision for important intellectual content.

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