



Association of self-perceived depressive feelings and cognitive performance with prevalence of depression among quilombola elderly people

Eriko Bruno Costa Barros¹ 
Andréa Suzana Vieira Costa¹ 
Francisca Bruna Arruda Aragão² 
Gilberto Sousa Alves^{3,6} 
Yara Maria Cavalcante de Portela⁴ 
Bruno Luciano Carneiro Alves de Oliveira^{3,4,5} 

Abstract

Objective: To analyze the association of self-perceived depressive feelings and cognitive performance with prevalence of depressive symptoms among quilombola elderly people. **Methods:** Cross-sectional study conducted with elderly people from 11 communities in Bequimão-MA. Socioeconomic and health conditions, self-perception of depressive feelings, cognitive performance by the Mini-Mental State Examination (MMSE) and prevalence of depressive symptoms by the *Geriatric Depression Scale* (GDS-30) were investigated. Crude and adjusted prevalence ratios were calculated with a confidence interval of 95% by Poisson regression with robust variance. **Results:** A total of 59.5% of the elderly people were females, 50.6% were up to 69 years old and 83.7% were classified in socioeconomic status E. Moreover, 45.7% reported feeling “down” or “without perspective”; 12.1% had altered cognitive performance and 46.4% were screened as depressed by the GDS-30. Based on the GDS-30, 65.0% of the elderly people reported perception of depressive feelings associated depression, as well as 70% of them showed altered cognitive performance. In the adjusted analysis, depression evaluated by the GDS-30 was associated with self-perceived depressive feelings (PR= 2.02; 95% CI: 1.26-3.26), but not with the MMSE (PR= 1.64; 95% CI: 0.90-3.01). **Conclusion:** There was a high prevalence of self-perceived depressive feelings and depressive symptoms identified by the GDS-30. The association between these variables points to the importance of monitoring the mental health of quilombola elderly people.

Keywords: Depression. Mental Status and Dementia Tests. Aged. Health of Ethnic Minorities.

¹ Universidade Federal do Maranhão, Campus Pinheiro (UFMA). Pinheiro, MA, Brasil.

² Universidade Ceuma, Curso de Enfermagem, São Luís, MA, Brasil.

³ Universidade Federal do Maranhão, Centro de Ciências Biológicas e da Saúde, Campus São Luís (UFMA). São Luís, MA, Brasil.

⁴ Universidade Federal do Maranhão, Pós-graduação em Saúde Coletiva (PPGSC). São Luís, MA, Brasil.

⁵ Universidade Federal do Maranhão, Pós-graduação em Enfermagem (PPGENF). São Luís, MA, Brasil.

⁶ Universidade Federal do Rio de Janeiro, Pós-graduação em Psiquiatria e Saúde Mental (PROPSAM/UFRJ). Rio de Janeiro, RJ, Brasil"

Funding: The project was partially funded by the Maranhão State Research Foundation (FAPEMA, universal call for proposals), National Council for Scientific and Technological Development (CNPq, universal call for proposals), and Federal Agency for the Support and Evaluation of Graduate Education (CAPES), Graduate Program in Public Health (funding code 001).

The authors declare that there is no conflict in the conception of this work.

Correspondence
Bruno Luciano Carneiro Alves de Oliveira
oliveira.bruno@ufma.br

Received: April 05, 2023
Approved: June 22, 2023

INTRODUCTION

Population aging is a global trend and reinforces the importance of understanding themes related to old age in different areas of knowledge and socioeconomic contexts¹⁻³. In Brazil, until 2060, the Brazilian population aged 65 or older will correspond to 26.7% (58.4 million) of individuals, and life expectancy in the country will approach 81 years⁴.

However, this gradual aging process is marked by dilemmas, challenges and paradoxes, since elderly people still remain under strong vulnerabilities and deprivations that often increase their risks for physical and psychiatric disorders like dementia and depression. Thus, negative mental health outcomes are prevalent among elderly citizens, but remain the least evaluated among those living in rural and peripheral areas of the country⁵.

Socioeconomic factors, in turn, make the aging process in Brazil heterogeneous and marked by inequalities. Racial inequities establish disparities between whites and blacks or browns – which contribute to the maintenance of material misery, restriction of political participation and spatial and social isolation of this population group^{6,7}. These inequalities negatively impact the aging of the black population in the country: elderly citizens with black or brown skin color/race, when compared to white ones, predominate in the younger age groups (65-69 years), have high exclusive dependence on public health services, lower education, lower income levels and live in areas with the worst social and health indicators in the country⁸.

In Brazil, there are rural communities that have particular characteristics, which are the quilombola communities. They are part of this historical context of social exclusion suffered by blacks in Brazil as expressions of resistance. These are rural groups formed by descendants of people who were enslaved and who organized themselves in spaces that allow the expression of traditional values and practices, based on African ancestry. In these communities, racial inequities translate into social determinants that materialize elements intensifying vulnerabilities, putting longevity in check and favoring the emotional and psychological distress of this population^{9,10}.

The adaptation of the individual to this stage of life, marked by functional decline and stressful life events – such as mourning following the loss of relatives, friends and spouses – may be associated with processes of physical, emotional and/or social vulnerability that cause or precipitate the manifestation of depressive symptoms¹¹.

Depression is characterized by depressed mood, loss of interest in activities once considered pleasurable and changes in biological functioning, such as changes in sleep patterns and appetite. In elderly people, depressive symptoms can also manifest themselves through irritability, apathy, guilt, helplessness, desire to be isolated at home, sleep disorders, loss of energy, constant thoughts about the past and negative evaluation of oneself, the future and life^{2,12,13}. Depressive disorders have a multifactorial etiology and, among older people, biological, psychological and social factors compete, interact and determine the high prevalence of depressive symptoms at this stage of life¹⁴⁻¹⁶. Globally, the prevalence of depression among the elderly population is high, and there is a set of variables associated with it. One systematic review and meta-analysis provided an estimate of the prevalence of depression during old age¹⁷. The average expected prevalence of depression during old age was 31.7% (95% CI 27.9, 35.6). In the sub-group analysis, the pooled prevalence was higher among low- and middle-income countries (40.8%) than among high-income countries (17.1%)¹⁷.

Unsatisfactory self-perception of emotional state and presence of depressive symptoms can also indicate levels of emotional distress and can be used as markers in the evaluation of emotional health using a screening test. Thus, poor emotional self-perception and the presence of depressive symptoms can be predictors of the clinical presentation of depressive symptoms in elderly people. In this way, the screening and, later, the treatment of depressive symptoms constitute protection for the independence and autonomy of older adults¹⁸.

Loneliness, changed roles, lack of social and family support, prior depression and cognitive decline are psychological factors that are associated with depression in the elderly population^{3,15}. The term depressive *pseudodementia* was created as a result of the high frequency of cognitive complaints in

depressive elderly people, where it was observed, accompanying the depressive symptoms, difficulties in concentration, attention and lack of memory, similar to the cognitive changes observed in dementia conditions. Nonetheless, recent investigations indicate that depressive disorders act as a strong indicator of the development of dementia processes and should therefore motivate the screening and evaluation of cognitive symptoms in older adults with depressed mood and anhedonia^{16,19,20}. Based on these findings, the term *pseudodementia* is now considered inappropriate and misleading^{16,19,20}.

Within this panorama, this study has the objective of analyzing the association of self-perceived depressive feelings and impaired cognitive performance with prevalence of depression measured by the *Geriatric Depression Scale* (GDS-30) among elderly citizens in quilombola populations.

METHODOLOGY

This is a cross-sectional and household-based study that used data from the project “Population Survey on Living Conditions and Health of Elderly People from the Quilombola Population in a City in the Baixada of the Maranhão State” (IQUIBEQ Project). Data collection took place between July 2019 and March 2020 in the municipality of Bequimão – MA, where 11 Quilombola Communities participating in the study were located, namely: Ariquepá, Conceição, Juraraitá, Mafra, Marajá, Pericumã, Santa Rita, Sibéria, Suassuí, Ramal do Quindíua and Rio Grande. These communities are officially recognized as remnants of quilombola people by the Palmares Cultural Foundation and by the Brazilian Ministry of Culture (Figure 1).

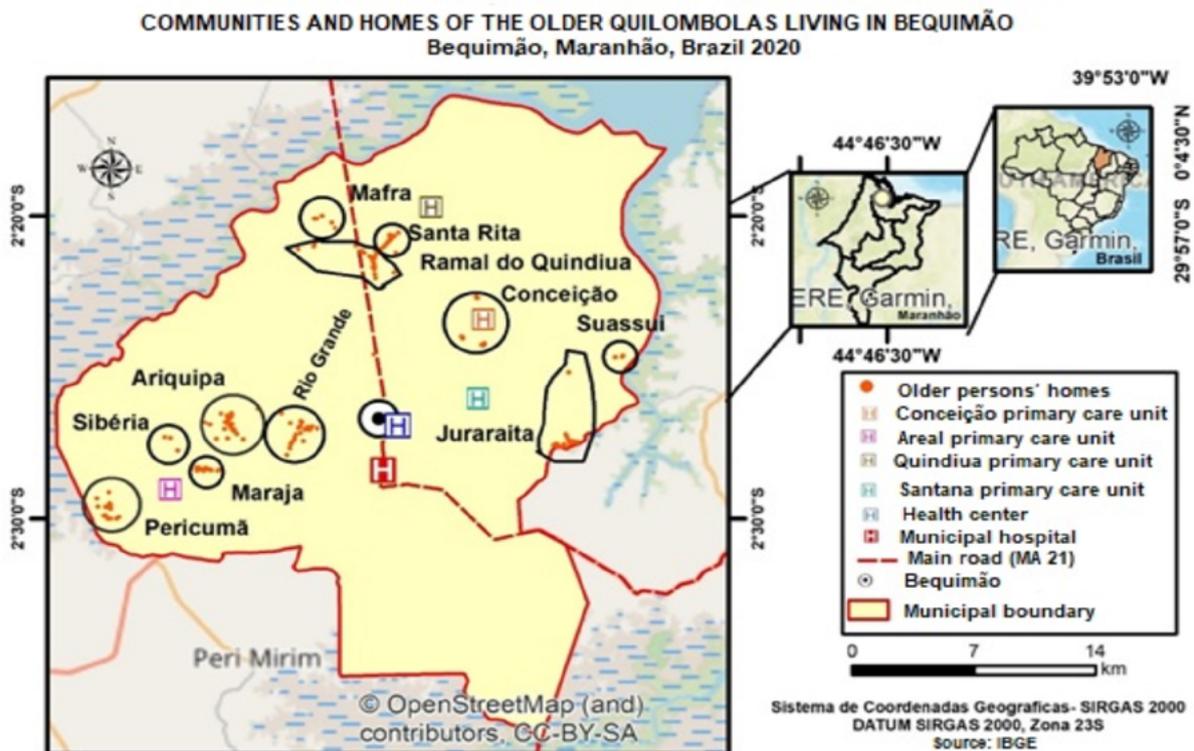


Figure 1. Geographic location of quilombola communities in Bequimão, Maranhão, Brazil, 2020.

The municipality of Bequimão is located in the northern mesoregion and in the microregion of Baixada Ocidental of the Maranhão State. In geographic terms, its location is on the side of the MA-211 road, at an equidistant point from the capital, São Luís, and the campus of the Federal University of Maranhão, Pinheiro – MA Campus. In 2010, the total area of the municipality of Bequimão was 761.49 km² and the census population was 20,344 inhabitants (67.5% in rural areas and 12.3% of the elderly citizens). The Human Development Index (HDI) was 0.601 and the Gross Domestic Product per capita was R\$2,754.37^{21,22}.

The study population consisted of elderly people residing in quilombola communities and older than 60 years. The selection of these citizens took place through the articulation between the Municipal Department of Social Welfare and the Community Health Workers (CHW) of each community. From a survey carried out by CHW, a total of 245 elderly people were identified. For this study, a sample was calculated. Sample calculation was performed using Epi Info, version 7. With an estimated prevalence and error margin of 50% and 4.0%, respectively, for a confidence level of 95%, the calculated sample consisted of 168 subjects (68.6%). The elderly people were selected through simple random sampling.

The inclusion criteria used to select the studied population were: individuals aged ≥ 60 years, who met the definition of an elderly person by Brazilian legislation²³, males and females, able to communicate with the researcher and residents in communities certified by the Palmares Foundation in Bequimão. The exclusion criteria were: elderly people unable to communicate with the researcher, who were not interviewed after several attempts or refused to participate in the research.

Questionnaires were applied to analyze the socioeconomic and health aspects: self-perceived depressive feelings, impaired cognitive performance and depressive symptoms. For socioeconomic conditions, the questionnaires were adapted from the 2013 National Health Survey (NHS) and can be verified on the website <https://www.pns.icict.fiocruz.br>. The evaluated variables were: gender (male or female); age group (in years: 60 to 69, 70 to 79 and

≥ 80), race/skin color (white, brown, black or other), marital status (with or without a spouse), number of residents per household (in categories: 1, 2 and ≥ 3 people), literate/education in years (illiterate, low and medium [1 to 8 years of incomplete schooling] and high education [8 or more years of complete schooling]), family income in Brazilian reais [< 1 and 1 to 3 minimum wages), socioeconomic status according to Social Class indicated by *Novo Critério Brasil*²⁴, number of rooms (≤ 3 , 4 to 7 and ≥ 8), water treatment at home (yes or no), disposal of sewage from the bathrooms/toilets existing in the household (Septic tank, rudimentary *septic tank* and open-air) and households with the simultaneously adequate floor, roof and wall conditions. As for the variables related to self-perception of depressive feelings, the following questions were used: “*Has any health professional ever given you a diagnosis of depression?*” and “*In the past two weeks, how often have you felt depressed, ‘down’ or ‘without perspective’?*”.

The Mini-Mental State Examination (MMSE) was also applied to evaluate the mental status among elderly citizens^{7,25}. This instrument was applied and analyzed according to the recommendations of Bertolucci et al. 1994²⁵, who adjusted cut-off points suggestive of cognitive impairment to intervals determined on the basis of formal education: for illiterates (cannot read or write): 13 points; for individuals with low (1 to 4 years of incomplete schooling) or medium education (4 to 8 years of incomplete study): 18 points; and high education (8 or more years of schooling): 26 points. The Geriatric Depression Scale (GDS-30) was applied for depression screening specifically in the elderly population⁶. The cut-off point set at 10 was adopted to evaluate depressive symptoms; individuals with scores below 10 were considered normal and values above or equal to 10 were considered indicative of depressive symptoms^{12,26}.

The absolute and relative frequencies of the variables under study and their association with prevalence of depression measured by the GDS-30 were estimated. Pearson’s Chi-square tests were estimated with a significance level of 5%. Crude and adjusted Poisson’s analyses with robust variance were performed to test the associations of *impaired cognitive performance* and self-perceived depressive symptoms

with prevalence of depression measured by the GDS-30. In the adjusted model, gender, socioeconomic status and age were considered as confounding variables. These variables were selected based on theoretical criteria or statistical significance ($p < 0.05$) in relation to impaired cognitive performance and presence of depression according to the GDS-30. Residual analysis was performed using graphical analysis and significance test.

The Prevalence Ratio (PR) and Confidence Intervals (95% CI) were estimated. All data analyses will be performed using Stata®, version 14 (StataCorp LP, College Station, Texas, USA).

The research was approved by the *Research Ethics Committee of the University Hospital – UFMA*, which evaluated the research project in accordance with Resolution nº 466/2012 of the National Health Council. The number of the substantiated and favorable order is 2.476.488/2018, and all participants signed the Free and Informed Consent Form before the collection.

RESULTS

Among the 168 elderly citizens (born between 1914 and 1958), 59.5% were females. The average age was 69 (64-77) years, 50.6% of them were aged up to 69 years old and 16% were long-lived (≥ 80 years old). It was found a higher percentage of elderly people with black color/race (59.0%), where most lived with three or more people in the household (57.1%), had a family income of 1 to 3 minimum wages (64.8%) and were classified in status E in relation to socioeconomic class (83.7%). Most were illiterate (54.2%). As for the household conditions, most lived in homes with 4 to 7 rooms (68.0%), and it is common to find households that did not have adequate floor, roof and wall conditions at the same time (71%). For 68% of the elderly people, treatment for water consumption at home was not carried out and only about 59% of the households had a septic

tank, while 13% disposed of waste in the open-air environment (Table 1).

Concerning emotional health, of the 166 elderly people who underwent cognitive function evaluation through the MMSE, 12.1% had impaired cognitive performance. About 99.0% of the elderly citizens reported that they had never received a previous diagnosis of depression from a health professional. Nonetheless, the prevalence of those who reported feeling depressed, “down” or “without perspective” was 45.7%. When screening for depression using the GDS-30, this outcome is prevalent in 46.4% of the sample (Table 2).

This prevalence of depression according to the GDS-30 was statistically significant and higher among women (53%; p -value = 0.038), elderly citizens in the worst socioeconomic statuses (class D: 25.0% and class E: 50.3%; p -value=0.019), with *impaired cognitive performance* (70.0%; p -value=0.017) and greater self-perception of depressive symptoms (64.5%; p -value=0.001). Although the prevalence of depression according to the GDS-30 increased with age, this association was not statistically significant (p -value=0.810). (Table 3).

When testing the association of impaired cognitive performance and self-perceived depressive symptoms with depression by the GDS-30, it was found that only self-perceived depressive symptoms was associated with prevalence of depression by the GDS-30 in the crude and adjusted analysis. In the crude analysis, elderly people who self-reported these symptoms were more likely to be rated as having depression by the GDS-30 (PR = 2.15; 95% CI: 1.34-3.44). After adjustment for confounding factors, the prevalence ratio was attenuated, but the positive association remained. Elderly people who self-perceived depressive symptoms were twice as likely to be screened for depression by the GDS-30 (PR= 2.02; 95% CI: 1.26-3.26). The final model showed good goodness of fit and p -value (> 0.05). (Table 4).

Table 1. Socioeconomic and demographic characteristics of elderly people in quilombola populations ≥ 60 years old (n=168), Bequimão (IQUIBEQ Project), Maranhão, Brazil, 2020.

| Variables | n (%) |
|--|------------|
| Gender | |
| Male | 68 (40.4) |
| Female | 100 (59.5) |
| Age group (years) | |
| 60 to 69 | 85 (50.6) |
| 70 to 79 | 56 (33.3) |
| ≥ 80 | 27 (16.0) |
| Color/race | |
| Black | 98 (59.0) |
| Brown | 52 (31.3) |
| Other | 16 (9.6) |
| Marital status | |
| Married/stable relationship | 58 (34.5) |
| Separated/divorced/widowed | 110 (65.5) |
| Literate/Education (in years)** | |
| Illiterate | 90 (54.2) |
| Low and medium | 76 (45.8) |
| High | 0 (0.0) |
| Number of members per household | |
| Living alone | 26 (15.4) |
| Two | 46 (27.3) |
| Three or more | 96 (57.1) |
| Family income considering the minimum wage (R\$954.00) | |
| < 1 Minimum wage | 59 (35.1) |
| 1 to 2 minimum wages | 109 (64.8) |
| Socioeconomic status* | |
| C | 3 (1.8) |
| D | 24 (14.4) |
| E | 139 (83.7) |
| Number of rooms per household | |
| ≤ 3 | 2 (1.2) |
| 4 to 7 | 113 (68.0) |
| ≥ 8 | 51 (30.7) |
| Treatment of drinking water | |
| Adequate | 113 (68.0) |
| Inadequate | 53 (31.9) |
| Use of adequate construction material for walls, roof and floor ** | |
| Yes | 48 (28.9) |
| No | 118 (71.1) |
| Sewage disposal | |
| Septic tank | 98 (59.0) |
| Rudimentary septic tank | 46 (27.7) |
| Open-air | 22 (13.2) |

Notes: *There were no elderly people in social statuses A and B; ** missings n=2.

Table 2. Evaluation of mental health status and depressive symptoms in quilombola elderly people ≥ 60 years old (n=168), Bequimão (IQUIBEQ Project), Maranhão, Brazil, 2020.

| Variables | n (%) |
|--|------------|
| Impaired cognitive performance (MMSE) ¹ | |
| Yes | 20 (12.1) |
| No | 146 (87.9) |
| Have you ever received a diagnosis of depression from a healthcare professional? | |
| Yes | 2 (1.2) |
| No | 164 (98.8) |
| Self-perceived depressive symptoms ² | |
| Yes | 76 (45.7) |
| No | 90 (54.2) |
| Prevalence of depression according to the <i>GDS-30</i> ³ | |
| No depression | 90 (53.6) |
| Depression | 78 (46.4) |

Notes: 1- Mini-Mental State Examination; 2- Self-perception of depression and feeling down and without perspective for more than half the day in the last two weeks; 3- Geriatric Depressive Scale-30

Table 3. Socioeconomic, demographic and mental health characteristics of elderly people in quilombola populations aged ≥ 60 years (n=168) with diagnosis of depressive symptoms according to the Geriatric Depression Scale (GDS-30), Bequimão (IQUIBEQ Project), Maranhão, Brazil, 2020.

| Variables | Depression | | <i>p</i> -valor |
|---------------------------------|--------------|-------------|-----------------|
| | Yes n (%) | No n (%) | |
| Gender | | | |
| Male | 25 (36.7) | 43 (63.2) | 0.038 |
| Female | 53 (53.0) | 47 (47.0) | |
| Age group (years) | | | |
| 60 to 69 | 38 (44.7) | 47 (55.2) | 0.810 |
| 70 to 79 | 26 (46.4) | 30 (53.7) | |
| ≥ 80 | 14 (51.8) | 13 (48.1) | |
| Color/race | | | |
| Black | 40 (40.8) | 58 (59.1) | 0.112 |
| Brown | 30 (57.6) | 22 (42.3) | |
| Other | 6 (37.5) | 10 (62.5) | |
| Marital status | | | 0.530 |
| Married/stable relationship | 25 (43.1) | 33 (56.9) | |
| Separated/divorced/widowed | 53 (48.2) | 57 (51.8) | |
| Literate/Education (in years)** | | | 0.956 |
| Illiterate | 42 (46.7) | 48 (52.3) | |
| Low and medium | 34 (44.7) | 42 (55.3) | |
| High | 0 (0) | 0 (0) | |

to be continued

Continuation of Table 3

| Variables | Depression | | <i>p</i> -valor |
|--|--------------|-------------|-----------------|
| | Yes n (%) | No n (%) | |
| Number of members per household | | | |
| Living alone | 11 (42.3) | 15 (57.6) | 0.872 |
| Two | 21 (45.6) | 25 (54.3) | |
| Three or more | 46 (47.9) | 50 (52.0) | |
| Family income considering the minimum wage (R\$954.00) | | | |
| < 1 Minimum wage | 26 (44.0) | 33 (55.3) | 0.652 |
| 1 to 2 minimum wages | 52 (47.7) | 57 (52.2) | |
| Socioeconomic status* | | | |
| C | 0 (0) | 3 (100) | 0.019 |
| D | 6 (25.0) | 18 (75.0) | |
| E | 70 (50.3) | 69 (49.6) | |
| Number of rooms per household | | | |
| ≤ 3 | 0 (0) | 2 (100) | 0.422 |
| 4 to 7 | 52 (46.0) | 61 (53.9) | |
| ≥ 8 | 24 (47.0) | 27 (52.9) | |
| Treatment of drinking water | | | |
| Adequate | 46 (40.7) | 67 (59.2) | 0.055 |
| Inadequate | 30 (56.6) | 23 (43.4) | |
| Use of adequate construction material for walls, roof and floor ** | | | |
| Yes | 27 (56.3) | 21 (43.7) | 0.080 |
| No | 49 (41.5) | 69 (58.5) | |
| Sewage disposal | | | |
| Septic tank | 42 (42.8) | 56 (57.1) | 0.578 |
| Rudimentary septic tank | 22 (47.8) | 24 (52.1) | |
| Open-air | 12 (54.5) | 10 (45.4) | |
| Impaired cognitive performance (MMSE) ¹ | | | |
| Yes | 14 (70.0) | 6 (30.0) | 0.017 |
| No | 62 (42.5) | 84 (57.5) | |
| Self-perceived depressive symptoms ² | | | |
| Yes | 49 (64.5) | 27 (35.5) | 0.001 |
| No | 27 (30.0) | 63 (70.0) | |

Notes: * Pearson Chi-square test; ** missings n=2; **1**- Mini-Mental State Examination; **2**- Self-perception of depression and feeling down and without perspective for more than half the day in the last two weeks; **3**- Geriatric Depressive Scale.

Table 4. Crude and adjusted association of impaired cognitive performance and self-perceived depressive symptoms with diagnosis of depression according to the Geriatric Depression Scale (GDS-30) of elderly people in quilombola populations ≥ 60 years old ($n=168$), Bequimão (IQUIBEQ Project), Maranhão, Brazil, 2020.

| Variables | Depression | | | |
|--|----------------|-----------|--------------------------------|------------------------|
| | Crude Analysis | | Adjusted Analysis ³ | |
| | PR | 95% CI | PR | 95% CI |
| <i>Impaired cognitive performance (MMSE)¹</i> | | | | |
| Yes | 1.65 | 0.93-2.94 | 1.64 | 0.90-3.01 ⁴ |
| No | --- | --- | --- | --- |
| <i>Self-perceived depressive symptoms²</i> | | | | |
| Yes | 2.15 | 1.34-3.44 | 2.02 | 1.26-3.26 ⁵ |
| No | --- | --- | --- | --- |

Notes: 1- Mini-Mental State Examination; 2- Self-perception of depression and feeling down and without perspective for more than half the day in the last two weeks; 3- Adjusted for variables: gender, socioeconomic status and age; 4- Deviance goodness of fit: 106.101 and Prob > chi2 = 0.98; 5- Deviance goodness of fit: 102.531 and Prob > chi2 = 0.98.

DISCUSSION

The results show a high prevalence of self-perceived depression feelings and depression identified by the GDS-30. The association between these variables points to the importance of regularly monitoring the mental health of elderly people in quilombola populations, since, although negative mental health outcomes are prevalent in the elderly population, they remain the least evaluated among older adults from remote areas, such as rural or quilombola communities.

Between and within countries, there are important variations in the prevalence of depression^{17,20}. Part of these differences can also be attributed to the different cut-off points employed in the use of the GDS-30. Nonetheless, socioeconomic and demographic determinants remain the most evaluated, and studies that verify the self-perception of depression feelings as a predictor of depression tracked through an adequate instrument, such as the GDS-30^{17,20}, are still scarce. Thus, this would be an important contribution of this work.

The World Health Organization (WHO) estimates that, worldwide, more than 322 million people, of all ages, suffer from depressive disorders. *The total estimated number of people living with depression increased by 18.4% between 2005 and 2015.* This number makes depression the leading cause of disability around the

world, generating inestimable costs for the global health system^{26,27}. In Brazil, population-based studies indicate prevalence rates ranging between 13% and 38% of depressive disorders in the elderly population living in communities²⁸ – it is estimated that, among those institutionalized, the prevalence may be higher than 53%³.

The high prevalence of depression among elderly people in quilombola populations in Bequimão-MA may be related to the precariousness of living conditions and overlapping vulnerabilities, characterized by worse socioeconomic status and inadequate sanitary conditions in households and communities^{28,29}. It is worth noting that the prevalence of depression in the studied population proved to be higher than the prevalence of depression in other quilombola communities, under analogous living conditions³⁰. Nonetheless, the depression screening instrument used in this analysis (GDS-30) was different from that used in the comparison study (PHQ-9)³⁰. On the other hand, they were higher than those observed among elderly citizens in other low- and middle-income countries^{17,20}.

Despite its significant prevalence, it is believed that depression is one of the most under-identified and under-reported chronic diseases by health professionals³¹. Regarding the elderly population, this under-diagnosis is mainly attributed to four factors: 1) the widespread belief that depressive symptoms are

normal manifestations of the aging process; 2) the social stigma surrounding mental disorders, which generally makes the patient and/or family reluctant to accept the existence of mental illness and seek help; 3) failure to train primary health care teams in terms of recognizing and diagnosing mental disorders; 4) evident scarcity of mental health care services in the primary health system. Added to these factors, it is important to emphasize that, in elderly people, the typical manifestations of depression can be distorted by the presence of other comorbidities, contributing to diagnostic failure, inadequate management of the disease, thus resulting in a worse prognosis^{2,32}. In the research undertaken with the quilombola citizens, the negligible number of individuals diagnosed with depression previously signaled by a health professional contrasted with the high number of individuals who signaled self-perception of depressive symptoms, suggesting a failure in terms of screening and diagnosis. In addition to the previously listed factors, it is questioned whether the attention and management given to mental health complaints in the population with black or brown color does not differ negatively from the attention given to mental health complaints in the white population, contributing to under-diagnosis and negatively impacting the prognosis^{7,33}.

In the studied population, the self-evaluation of depressive feelings was able to predict the presence of depressive symptoms screened by the GDS-30. The verification of the perception of elderly people in relation to their self-health status has significant relevance in terms of screening for depression because a poor evaluation of their health status can eventually be understood as a depressive symptom³⁴. Due to its subjective nature, self-perception of health has a multidimensional character, involves lifestyles, in addition to psychological, demographic and socioeconomic aspects of the perception of the individual in relation to his/her health status, being widely evidenced as an important aspect of individual and collective well-being in national and international studies. It is a reliable indicator that can be applied effectively, quickly, and at a low cost in the evaluation of the health conditions of population groups^{35,36}. Although the results indicate a low prevalence of cognitive impairment in the elderly citizens from the studied quilombola communities,

it was observed that the levels of cognition among those with positive screening for depression differed from the standard levels of cognition. Considering the association between depression and cognitive decline, it is worth noting that depressed mood and anhedonia can be confounding factors for performance on cognitive tests¹³. The prevalence of impaired cognitive performance in this study was higher than observed in an isolated rural community, descendent of slaves, in the Midwest Region of Brazil (2.6%, according to the MMSE cut-off point proposed by Bertolucci *et al*³⁷). It was also higher than that observed among urban elderly citizens living in São Paulo, but lower than for black elderly citizens in that city⁷.

The high prevalence of depressive symptoms among women in the studied population can be associated with the performance of gender roles in patriarchal societies: while men develop work activities outside the home and have the opportunity to engage in collective recreational activities (sports, bars, etc), women are reserved for domestic work and care for the family group, restricting their socialization outside this environment and their engagement in recreational activities other than individual ones. In rural communities, marked by low education, intense work routine and lack of leisure facilities, women are even more oppressed by their submissive relationship to men, which would lead them to establish a family early with older men, thus evading school activities and compromising their autonomy and economic independence when older^{4,36,38,39}.

Despite these results, it is worth highlighting some of its limitations. Survival bias could have impacted the results in two ways: since elderly citizens with worse health conditions tend to survive for a shorter time, the elderly people who participated in the study may represent a healthier portion of the studied population, and therefore have a lower estimate of cognitive impairment than the expected margin. Nonetheless, when selecting elderly people who lived for a longer time with precarious living conditions in their communities, accumulating losses and experiencing the accumulation of overlapping risks, it is possible to believe that these older adults also represent a portion more susceptible to the manifestation of depressive symptoms.

As this is a cross-sectional study, the simultaneous measurements of risk factors, protection and outcomes may limit the understanding of the directionality of some associations. The low prevalence of cognitive impairment in question in this study may be related to the sample size or even to the limitation of applying only a single type of cognitive screening test, since other tools could evaluate other dimensions of cognition, thus increasing the accuracy of the cognitive performance evaluation.

CONCLUSIONS

This study identified a high prevalence of self-perceived depressive feelings and depression according to the GDS-30, as well as an association between these two outcomes. This study can be considered as an early warning and advice for health professionals, health policymakers and other pertinent stakeholders to take effective control measures and periodic evaluation for the elderly population, since depressive disorders in older adults are associated with tragic outcomes on cognitive and functional decline, loss of maintenance of the social network and self-care, which can contribute to the emergence or worsening of diseases and even culminate in self-extinction. Depression is related to emotional and social factors, and a context of socioeconomic vulnerability and restricted access to health services may imply its higher prevalence and worse prognosis.

The quilombola population in Brazil lives in rural territories marked by poverty, geographic isolation and restricted social participation. Precarious sanitary and community infrastructure, high illiteracy rates and extreme dependence on social programs for income transmission mark a context of socioeconomic vulnerability and restricted access to health services that constitute a favorable scenario for greater involvement of infectious and parasitic diseases, worse prognosis of chronic non-communicable diseases, worse prenatal care, worse oral health and greater exposure to situations of sexual, physical and psychological violence.

Therefore, given this context, it is necessary to recognize that this scenario of discrimination and social exclusion makes this population need more attention and sensitivity from the health systems in relation to its psychological and emotional complaints, especially in old age. It is hoped that, when estimating the prevalence of depressive symptoms in the population of older adults among quilombola citizens, this work can serve as a subsidy for the strengthening of effective local actions and strategies that act in the prevention, diagnosis and adequate management of depressive disorders in this population.

AUTHORSHIP

- Eriko Bruno Costa Barros – study design, analysis and interpretation of data; article writing; approval of the version to be published and responsible for all aspects of the work, ensuring that questions relating to the accuracy or completeness of any part of the work are resolved.
- Andréa Suzana Vieira Costa – the analysis and interpretation of data; article writing; approval of the version to be published.
- Francisca Bruna Arruda Aragão – article writing; approval of the version to be published.
- Gilberto Sousa Alves – study design, analysis and interpretation of data; article writing; approval of the version to be published.
- Yara Maria Cavalcante de Portela – the analysis and interpretation of data; article writing; approval of the version to be published.
- Bruno Luciano Carneiro Alves de Oliveira – study design, analysis and interpretation of data; article writing; approval of the version to be published and responsible for all aspects of the work, ensuring that questions relating to the accuracy or completeness of any part of the work are resolved.

Edited by: Marquiony Marques dos Santos

REFERENCES

1. Brito MCC, Freitas CASL, de Mesquita KO, Lima GK. Envelhecimento populacional e os desafios para a saúde pública: análise da produção científica. *Revista Kairós: Gerontologia*. 2013;16(2):161-178. Available from: <https://doi.org/10.23925/2176-901X.2013v16i2p161-178>
2. Ramos GCF, Carneiro JA, Barbosa ATF, Mendonça JMG, Caldeira AP. Prevalência de sintomas depressivos e fatores associados em idosos no norte de Minas Gerais: um estudo de base populacional. *Jornal Brasileiro de Psiquiatria*. 2015;64:122-131. Available from: <https://doi.org/10.1590/0047-2085000000067>
3. Nóbrega IRAP. Prevalência de sintomas depressivos e fatores associados em idosos institucionalizados no município de Recife [Dissertação de Mestrado]. Pernambuco: Universidade Federal de Pernambuco; 2014. 94p. Available from: <https://repositorio.ufpe.br/handle/123456789/12960>
4. Ferreira JP, Leeson G, Melhado VR. Cartografias do envelhecimento em contexto rural: notas sobre raça/etnia, gênero, classe e escolaridade. *Trabalho, Educação e Saúde*. 2019;17(1): e0017612. Available from: <https://doi.org/10.1590/1981-7746-sol00176>
5. Rocha BLD, Bezerra PCDL, Monteiro GTR. Prevalência de sintomas depressivos e fatores associados em idosos de Unidades de Atenção Primária à Saúde em Rio Branco, Acre. *Revista Brasileira de Geriatria e Gerontologia*. 2021;24(3):e210034. Available from: <https://doi.org/10.1590/1981-22562021024.210034>
6. Damasceno MG, Zanello VML. Saúde mental e racismo contra negros: produção bibliográfica brasileira dos últimos quinze anos. *Psicologia: Ciência e Profissão*. 2018; 38(3):450-464. Available from: <https://doi.org/10.1590/1982-37030003262017>
7. Silva AD, Rosa TEDC, Batista LE, Kalckmann S, Louvison MCP, Teixeira DSDC, Lebrão ML. Iniquidades raciais e envelhecimento: análise da coorte 2010 do Estudo Saúde, Bem-Estar e Envelhecimento (SABE). *Revista Brasileira de Epidemiologia*. 2019;21(supl. 02):1-14. Available from: <https://doi.org/10.1590/1980-549720180004.supl.2>
8. Oliveira BLCAD, Thomaz EBAF, Silva RAD. Associação da cor/raça aos indicadores de saúde para idosos no Brasil: um estudo baseado na Pesquisa Nacional por Amostra de Domicílios (2008). *Cadernos de Saúde Pública*. 2014;30(7):1438-1452. Available from: <https://doi.org/10.1590/0102-311X00071413>
9. Costa ASV, Rodrigues LS, Cabral Jr JD, Coimbra LC, de Oliveira BLCA. Survey of the living conditions and health status of older persons living in Quilombola communities in Bequimão, Brazil: the IQIBEQ Project. *Journal of Public Health*. 2020; 1-9. Available from: <https://doi.org/10.1007/s10389-020-01198-y>
10. Ferreira RMP, Barros EBC, de Oliveira BLCA. Socioeconomic and Demographic Characteristics of Living Conditions of Elderly Quilombolas from Maranhão, Northeast Region, Brazil. In *Quality of Life-Biopsychosocial Perspectives*. 2020. IntechOpen. Available from: <http://doi.org/10.5772/intechopen.91315>
11. Casey DA. Depression in older adults: a treatable medical condition. *Primary Care: Clinics in Office Practice*. 2017;44(3):499-510. Available from: <https://doi.org/10.1016/j.pop.2017.04.007>
12. Alvarenga MRM, Oliveira MADC, Faccenda O. Depressive symptoms in the elderly: analysis of the items of the Geriatric Depression Scale. *Acta paulista de enfermagem*. 2012;25:497-503. Available from: <https://doi.org/10.1590/S0103-21002012000400003>
13. Lampert CDT, Scortegagna SA. Avaliação das condições de saúde e distorções cognitivas de idosos com depressão. *Avaliação Psicológica*. 2017;16(1):48-58. Available from: <http://dx.doi.org/10.15689/ap.2017.1601.06>
14. Ferreira-Agreli B, Dias FA, Santos-Ferreira PCD, Gomes NC, Santos-Tavares DMD. Functional disability and morbidities among the elderly people, according to socio-demographic conditions and indicative of depression. *Investigación y Educación en Enfermería*. 2017;35(1):48-58. Available from: <https://doi.org/10.17533/udea.iee.v35n1a06>
15. Ramos FP, da Silva SC, de Freitas DF, Gangussu LMB, Bicalho AH, de Oliveira SBV, et al. Fatores associados à depressão em idoso. *Revista Eletrônica Acervo Saúde*. 2019;(19): e239-e239. Available from: <https://doi.org/10.25248/reas.e239.2019>
16. Alexopoulos GS. Mechanisms and treatment of late-life depression. *Transl Psychiatry*. 2019;9:188. Available from: <https://doi.org/10.1038/s41398-019-0514-6>
17. Zenebe Y, Akele B, W/Selassie M, Necho M. Prevalence and determinants of depression among old age: a systematic review and meta-analysis. *Ann Gen Psychiatry*. 2021 Dec 18;20(1):55. Available from: 10.1186/s12991-021-00375-x. PMID: 34922595; PMCID: PMC8684627.

18. Kong D, Solomon P, Dong X. Depressive symptoms and onset of functional disability over 2 years: a prospective cohort study. *Journal of the American Geriatrics Society*. 2019;67(S3):S538-S544. Available from: <https://doi.org/10.1111/jgs.15801>
19. Sekhon S, Marwaha R. Depressive Cognitive Disorders. *StatPearls* [Internet]. 2021. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK559256/>
20. Hong Cai, Yu Jin, Rui Liu, Qing Zhang, Zhaohui Su, Gabor S. Ungvari et al. Global prevalence of depression in older adults: A systematic review and meta-analysis of epidemiological surveys, *Asian Journal of Psychiatry*, v. 80, 2023, 103417. Available from: <https://doi.org/10.1016/j.ajp.2022.103417>.
21. PNUD Brasil (Programa das Nações Unidas para o Desenvolvimento). 2013. Índice de Desenvolvimento Humano Municipal Brasileiro. Brasília, DF: PNUD, IPEA, FJP. 2013.
22. Brasil. Atlas do desenvolvimento humano no Brasil 2013. [Internet]. 2014. Available from: <https://www.observatoriodasmegacidades.net.br/atlas-do-desenvolvimento-humano-no-brasil-2013/>
23. Ministry of Health. Elderly Health Handbook. Brazil; 2017.
24. ABEP. Associação Brasileira de Empresas de Pesquisa. Critério Brasil 2018. [Internet]. 2018. Available from: <https://www.abep.org/criterio-brasil>.
25. Bertolucci PHF, Brucki SMD, Campacci SR, Juliano Y. O miniexame do estado mental em uma população geral. *Impacto da escolaridade*. *Arq Neuropsiquiatr* 1994; 52(1):1-7.
26. Krishnamoorthy Y, Rajaa S, Rehman T. Diagnostic accuracy of various forms of geriatric depression scale for screening of depression among older adults: systematic review and meta-analysis. *Archives of gerontology and geriatrics*. 2020, 87:104002. Available from: <https://doi.org/10.1016/j.archger.2019.104002>
27. World Health Organization. Depression and other common mental disorders: global health estimates. World Health Organization; 2017. Available from: <https://apps.who.int/iris/handle/10665/254610>
28. Mendes-Chiloff CL, Lima MCP, Torres AR, Santos JLF, Duarte YO, Lebrão ML, et al. Sintomas depressivos em idosos do município de São Paulo, Brasil: prevalência e fatores associados (Estudo SABE). *Revista Brasileira de Epidemiologia*. 2019;21:e180014. Available from: <https://doi.org/10.1590/1980-549720180014.supl.2>
29. Ramos-Oliveira D, Magnavita P, de Oliveira FS. Aspectos sociocognitivos como eventos estressantes na saúde mental em grupos étnicos e minoritários no Brasil. *Summa Psicológica UST*. 2017;14(1):43-55. Available from: <https://doi.org/10.18774/448x.2017.14.315>
30. Barroso SM, Melo APS, Guimarães MDC. Depressão em comunidades quilombolas no Brasil: triagem e fatores associados. *Revista Panamericana de Salud Pública*. 2014;35(4):256-263. Available from: <https://www.scielosp.org/pdf/rpsp/v35n4/04.pdf>
31. Molina MRAL, Wiener CD, Branco JC, Jansen K, Souza LDMD, Tomasi E, et al. Prevalência de depressão em usuários de unidades de atenção primária. *Archives of Clinical Psychiatry (São Paulo)*. 2012; 39: 194-197. Available from: <https://doi.org/10.1590/S0101-60832012000600003>
32. Bretanha AF, Facchini LA, Nunes BP, Munhoz TN, Tomasi E, Thumé E. Depressive symptoms in elderly living in areas covered by Primary Health Care Units in urban area of Bagé, RS. *Revista Brasileira de Epidemiologia*. 2015; 18: 1-12. Available from: <https://doi.org/10.1590/1980-5497201500010001>
33. Silva NG, Barros S, Azevedo FCD, Batista LE, Policarpo VC. O quesito raça/cor nos estudos de caracterização de usuários de Centro de Atenção Psicossocial1. *Saúde e Sociedade*. 2017;26:100-114. Available from: <https://doi.org/10.1590/S0104-12902017164968>
34. Borges LJ, Benedetti TRB, Xavier AJ, d'Orsi E. Fatores associados aos sintomas depressivos em idosos: estudo EpiFloripa. *Revista de Saúde Pública*. 2013;47:701-710. Available from: <https://doi.org/10.1590/S0034-8910.2013047003844>
35. Carneiro JA, Gomes CAD, Durães W, Jesus DRD, Chaves KLL, Lima CDA, et al. Negative self-perception of health: prevalence and associated factors among elderly assisted in a reference center. *Ciencia & saude coletiva*. 2020;25:909-918. Available from: <https://doi.org/10.1590/1413-81232020253.16402018>
36. Martins-Silva T, Hirschmann R, Bortolotto CC, Fernandes MP, Ruivo AC, Tovo-Rodrigues L. Health self-perception and morbidities, and their relation with rural work in southern Brazil. *Rural and remote health*. 2020; 20(1):5424-5424. Available from: <https://doi.org/10.22605/RRH5424>
37. Lopes D, Caixeta L. Prevalence of cognitive impairment of elderly living in an isolated community, a descendent of slaves, in central Brazil. *The journal Alzheimer's & Dementia*. (London). 2011;7(7):S253-S254. Available from: <https://doi.org/10.1016/j.jalz.2011.05.721>

38. Almeida AV, Mafra SCT, da Silva EP, Kanso S. A Feminização da Velhice: em foco as características socioeconômicas, pessoais e familiares das idosas e o risco social/The Feminization of Old Age: a focus on the socioeconomic, personal and family characteristics of the elderly and the social risk. *Textos & Contextos* (Porto Alegre). 2015;14(1):115-131. Available from: <https://doi.org/10.15448/1677-9509.2015.1.19830>
39. da Cruz RR, Beltrame V, Dallacosta FM. Aging and vulnerability: an analysis of 1,062 elderly persons. *Revista Brasileira de Geriatria e Gerontologia*. 2019;22(3):e180212. Available from: <https://doi.org/10.1590/1981-22562019022.180212>