TEXTO & CONTEXTO ENFERMAGEM
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FACTORS ASSOCIATED WITH SYMPTOMS OF DEPRESSION AMONG OLDER ADULTS DURING THE COVID-19 PANDEMIC

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ABSTRACT

Objective: to identify factors associated with depressive symptoms among older adults during the COVID-19 pandemic.
Method: a cross-sectional study developed in all regions of Brazil, using an electronic form among older adults aged 60 or over. Data were collected from April 17 to May 15, 2020. Measures of central tendency and dispersion were used. For comparison of means, Student's t-test and analysis of variance were applied, considering p≤0.05. For association of factors, chi-square was adopted with bivariate analyzes and logistic regression.
Results: nine hundred (100.0%) older adults participated in the study. The general score for symptoms of depression was 3.8 (SD=4.4), 818 (91.9%) had no or mild depressive symptoms. Women (p <0.01) have more symptoms than men. The income variable is a predictor of depressive symptoms (OR=0.56; CI: 0.34-0.91; p=0.020).
Conclusion: the main factors associated with symptoms of depression were sex, income, education and occupations that expose them to COVID-19 had the highest depression scores.

DESCRIPTORS: Aged. Coronavirus infections. Depression. Pandemic. Social Isolation.

HOW CITED: Pereira-Ávila FMV, Lam SC, Goulart MCL, Góes FGB, Pereira-Caldeira NMV, Gir E. Factors associated with symptoms of depression among older adults during the COVID-19 pandemic. Texto Contexto Enferm [Internet]. 2021 [cited YEAR MONTH DAY]; 30:e20200380. Available from: https://doi.org/10.1590/1980-265X-TCE-2020-0380

FATORES ASSOCIADOS AOS SINTOMAS DE DEPRESSÃO ENTRE IDOSOS DURANTE A PANDEMIA DA COVID-19

RESUMO

Objetivo: identificar os fatores associados aos sintomas de depressão entre idosos durante a pandemia do COVID-19.
Método: estudo transversal, desenvolvido em todas as regiões do Brasil, por formulário eletrônico entre idosos com 60 anos ou mais. Os dados foram coletados no período de 17 de abril até 15 de maio de 2020. Utilizou-se medidas de tendência central e de dispersão. Para a comparação das médias, aplicou-se o Teste t de *Student* e a Análise de Variância, considerando p≤0,05. Para a associação de fatores adotou-se qui-quadrado com as análises bivariadas e a regressão logística.
Resultados: participaram do estudo 900 (100,0%) idosos. O escore geral para sintomas de depressão foi de 3,8 (DP=4,4), 818 (91,9%) apresentaram sintomas mínimos. As mulheres (p<0,01) apresentam mais sintomas que os homens. A variável renda é fator preditor de sintomas depressivos (OR= 0,56; IC:0,34-0,91; p= 0,020).
Conclusão: os principais fatores associados aos sintomas de depressão foram sexo, renda, escolaridade e os idosos que têm ocupações que os expõem à COVID-19 apresentaram os maiores escores de depressão.

DESCRITORES: Idoso. Infecções por coronavírus. Depressão. Pandemias. Isolamento Social.

FACTORES ASOCIADOS CON SÍNTOMAS DE DEPRESIÓN EN ANCIANOS DURANTE LA PANDEMIA DE COVID-19

RESUMEN

Objetivo: identificar factores asociados con síntomas de depresión entre los ancianos durante la pandemia de COVID-19.
Método: estudio transversal, desarrollado en todas las regiones de Brasil, utilizando un formulario electrónico en personas mayores de 60 años o más. Los datos se recopilaron del 17 de abril al 15 de mayo de 2020.Se utilizaron medidas de tendencia central y dispersión. Para la comparación de medias se aplicó la prueba t de *Studen*t y el análisis de varianza, considerando p≤0.05. Para la asociación de factores se adoptó chi-cuadrado con análisis bivariados y regresión logística.
Resultados: participaron en el estudio 900 (100,0%) ancianos. La puntuación general para los síntomas de depresión fue de 3,8 (DE=4,4), 818 (91,9%) tenían síntomas mínimos. Las mujeres (p <0,01) tienen más síntomas que los hombres. La variable de ingresos es un predictor de síntomas depressivos (OR= 0,56; IC:0,34-0,91; p= 0,020).
Conclusión: los principales factores asociados con los síntomas de la depresión fueron el sexo, los ingresos, la educación y los ancianos que tienen ocupaciones que los exponen al COVID-19 tuvieron los puntajes más altos de depresión.

DESCRIPTORES: Anciano. Infecciones por coronavirus. Depresión. Pandemias. Aislamiento social.

INTRODUCTION

Coronavirus Disease 2019 (COVID-19) is a disease whose etiologic agent is severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and the greatest risk of infection is mainly related to old age and impaired immune system of an individual [1] Despite the fact that mortality is considered low, around 2% in the world, COVID-19 has been a cause of great concern, especially because of the great power of transmissibility in a short period of time, and the absence of a vaccine for prevention[1]

In Brazil, until October 13, 2020, there were 5,103,408 cases of the disease,150,689 deaths and a fatality rate of 3.0% with 383,980 hospitalizations due to Severe Acute Respiratory Syndrome (SARS) in individuals over 60 years of age.[2] The age group over 60 years has been the most prevalent in hospitalizations for COVID-19 and SARS, precisely because of the presence of comorbidities such as hypertension, diabetes, heart disease, and respiratory diseases.[3]

In addition, there is decreased immune function and multimorbidity, which directly imply a significantly higher risk for contracting COVID-19.[4] Older adults, in addition to being more susceptible to infection, are at greater risk of worsening the cases and have a different behavior from the disease. In the United States, the cases reported until mid-March 2020 pointed out that the average number of days, from the onset of symptoms to death, is approximately 11 days in older adults.[4]

It is noteworthy that a study predictive of the occurrence of COVID-19 in a Brazilian municipality estimated, through three mathematical models, that the absolute number of deaths is higher among older adults in all the proposed scenarios. Furthermore, the number of deaths of the old people (≥ 80 years old) is at least twice as high as the deaths of older adults aged 70 to 79 years[5].

In the meantime, among the recommendations for preventing the disease and mitigating the spread of the virus by the World Health Organization and the Brazilian Society of Geriatrics, using masks and social distancing stand out. Although these measures are not able to prevent the transmission of the virus in isolation, quarantine and social isolation of families, or age groups, including asymptomatic ones, are associated with a lower incidence of secondary cases of the disease or with the deceleration of the growing trend transmission, according to mathematical models.[6–7]

If, on the one hand, social isolation measures have been shown to be effective in containing the epidemic in several countries, on the other hand, isolation among older adults population is considered worrying[1,6].The physiological and aging aspects, especially with regard to cardiovascular and neurobehavioral disorders, make older adults often depend on social interactions to stay healthy.[8]

The response of older adults to the current situation, in addition to permeating physical factors, is directly associated with cultural and emotional issues, including the possibility of manifestations of passivity, impotence, resignation, lack of empathy, exclusion, and anger. In addition to this scenario, there is the abrupt interruption of family ties and interactions that should involve them in love, and protection in the face of the complexity of experiencing a pandemic.[9]

The disconnection from society and the social isolation of older adults put them in a situation of greater vulnerability to psychological problems such as depression and anxiety.[8] A study that used the Patient Health Questionnaire-9 (PHQ-9), with 33 institutionalized elderly, pointed out the predominance of females for moderate and severe symptoms of depression and the relationship between symptoms and a report of falls in the last year in 36.4% of the investigated population.[10]

However, no investigations were found regarding depressive symptoms in Brazilian older adults in the pandemic context caused by the new coronavirus, which has promoted widespread social isolation. Therefore, this study aimed to identify the factors associated with symptoms of depression among older adults during the COVID-19 pandemic.

METHOD

This is a cross-sectional study, with a quantitative approach, developed in all regions of Brazil (North, Northeast, Center-West, Southeast, and South). Data were collected from April 17 to May 15, 2020 using the online collection technique. The population was invited to participate in the study through messages in electronic media (Instagram, Facebook, WhatsApp, and Twiter) and in the profiles of the researchers of the study team. Individuals aged 60 or over were adopted as inclusion criteria, and foreigners residing in Brazil were excluded.

The online data collection instrument, using the electronic Google forms, contained two parts. The first consisted of individual information, namely, sex, age, marital status, educational level, region, number of family members living in the same house, occupation, monthly income, frequency of flu symptoms in the last year, social isolation, contact with people with COVID-19, wearing a mask and hand washing; the second part consisted of the Brazilian Portuguese version of PHQ-9.

The PHQ-9 assesses the symptoms of Major Depressive Disorder (MDD), tracking adults and elderly individuals most at risk for developing depression. MDD is defined as a mental disorder characterized by the presence of four or more depressive symptoms, such as changes in mood, appetite, sleep, anhedonia, lethargy, guilt, low self-esteem, difficulty concentrating, restless, and suicidal ideation, addressed in the instrument. The diagnosis of depression is not made by applying the PHQ-9; however, the presence of four or more of the symptoms in the last two weeks may indicate the prevalence of depressive signs.[11]

The PHQ-9, Brazilian Portuguese version, consists of nine questions that assess the presence of each of the symptoms for depression episodes. The frequency of each symptom in the last two weeks is assessed on a Likert-type scale from 0 to 3, corresponding to answers “not at all”, “several days”, “more than half the days” and “nearly every day”, respectively. The instrument’s sensitivity and specificity were verified among older adults and adults in the general population, being considered satisfactory[12]. Authorization was granted for using the Brazilian Portuguese version of PHQ-9 to carry out this study.

The total PHQ-9 score ranges from zero to 27 points; the higher the score, the greater the severity of depressive symptoms. The total scores represent, in their cut-off points, the respective classifications: 5 - mild depressive symptoms; 10 - moderate depressive symptoms; 15 - moderately severe depressive symptoms; 20 - severe depressive symptoms. It is noteworthy that the cut-off point equal to or greater than 10 lights up a yellow alert in the sense of a possible significant clinical condition; if this point is equal to or greater than 15, it lights up a red alert for the need for clinical follow-up; when item 9 of PHQ-9, which assesses the risk for suicidal ideation, is answered positively, it indicates the need for an intervention.[13]

The data from the electronic forms were exported to an Excel® spreadsheet and analyzed using the IBM-SPSS program (International Business Machines Corporation-Statistical Package for the Social Sciences), v.22, using descriptive statistics with tendency measures (mean, median, maximum and minimum) and dispersion (standard deviation). Student’s t-test and analysis of variance (ANOVA) were used to analyze the association between the means of depression and independent variables, considering statistically significant associations values of $p \leq 0.05$ and a confidence interval of 95 % (95% CI). Outcome variables (dependent) were the average of the total depression score and having symptoms of depression (yes or no). Independent variables for both outcomes were sex, region, age, marital status, income, educational level, occupation, social isolation, contact with people with COVID-19 and wearing masks.

In the binary logistic regression model, associations with $p < 0.20$ between having symptoms of depression and independent variables were submitted, as this dependent variable was of a dichotomous nature, thus aiming to estimate the probabilities associated with the occurrence of having depressive symptoms by calculating Odds Ratio (OR) and their respective 95% confidence intervals.

RESULTS

Nine hundred (100.0%) older adults, with a mean age of 65 years (Minimum=60, Maximum=94), participated in the study, predominantly female (n=661/73.4%), married (n=513/57.0%), with graduate degrees (n=506/56.2%) and who did not have a health occupation (n=581/64.6%) (Table 1).

Table 1 – Characterization of older adults according to individual variables. Brazil, 2020. (n=900)

Variables	Frequency (n)	Percentage (%)
Sex		
Female	661	73.4
Male	239	26.6
Brazil regions		
North	34	3.8
Northeast	209	23.2
Center-West	80	8.9
Southeast	504	56.0
South	73	8.1
Marital status		
Single	130	14.4
Married	513	57.0
Divorced	171	19.0
Widowed	86	9.6
Education		
Elementary shool	29	3.2
High school	102	11.3
Higher education	263	29.2
Graduate degree	506	56.2
Monthly family income (minimum wage)		
Up to 4	218	24.2
5 or more	682	75.8
Health occupation		
No	581	64.6
Doctors	69	7.7
Nursing professionals	138	15.3
Other health professionals	112	12.4
Use of mask		
Never	44	4.9
Fairly often	620	68.9
Always	236	26.2
Social isolation		
No	61	6.8
Yes	839	93.2
Hand wash		
Fairly often	475	52.8
Always	425	47.2

Study participants reported having experienced flu-like symptoms (such as cough, fever, and sore throat) on average 1.3 times in the last year (Minimum=0, Maximum=15, SD=1.6) and residing, on average, with two people (SD=1.4). The majority (n=620/68.9%) reported using masks with some frequency.

In the last two weeks, of the total number of elderly participants in the study, 259 (28.8%) reported little interest or pleasure in doing things; 297 (33.0%) felt "down" or depressed; 328 (36.5%) had trouble falling asleep or staying asleep, or sleeping too much; 322 (35.8%) felt tired or with little energy; 225 (25.0%) had a lack of appetite or ate too much; 134 (14.9%) felt bad about themselves or found themselves a failure or that they disappointed the family or themselves; 228 (25.3%) had difficulty concentrating; 113 (12.6%) were slow to move or spoke or were so fidgeting that they were pacing from side to side more than usual; 20 (2.2%) thought of getting hurt in some way, or that it would be better to be dead, almost daily. It is noteworthy that although not the majority, an important portion of older adults referred these symptoms to depression for several days (Table 2).

Table 2 – Frequency distribution of the responses of older adults to the scale items. Brazil, 2020. (n=900)

Scale items	Not at all	Several days	More than half the days	Nearly every day
	n(%)	n(%)	n(%)	n(%)
1. Little interest or pleasure in doing things	511(56.8)	259(28.8)	52(5.8)	78(8.7)
2. Feeling down, depressed or hopeless	534(59.3)	297(33.0)	31(3.4)	38(4.2)
3. Trouble falling asleep, staying asleep, or sleeping too much	450(50.0)	328(36.5)	54(6.0)	68(7.6)
4. Feeling tired or having little energy	517(57.4)	322(35.8)	36(4.0)	25(2.8)
5. Poor appetite or overeating	592(65.8)	225(25.0)	41(4.6)	42(4.7)
6. Feeling bad about yourself - or that you're a failure or have let yourself or your family down	737(81.9)	134(14.9)	14(1.6)	15(1.7)
7. Trouble concentrating on things, such as reading the newspaper or watching television	611(67.9)	228(25.3)	33(3.7)	28(3.1)
8. Moving or speaking so slowly that other people could have noticed. Or, the opposite – being so fidgety or restless that you have been moving around a lot more than usual	755(83.9)	113(12.6)	19(2.1)	13(1.4)
9. Thoughts that you would be better off dead or of hurting yourself in some way	873(97.0)	20 (2.2)	4(0.4)	3(0.3)

The mean of the total score of symptoms of depression among older adults was 3.8 (SD=4.4). Most 818 (91.9%) had no symptoms or mild depressive symptoms, followed by 51 (5.7%), who had moderate symptoms, 18 (2.0%), moderately severe symptoms and 13 (1.4%), symptoms of severe depression. It should be noted that 27 (2.9%) older adults were identified as a risk of suicidal ideation at different level of frequencies with reference to the item 9 of PHQ-9.

Comparing the means of the depression scores between variables, for sex there was a statistically significant difference (p <0.01), i.e., women showed more symptoms of depression compared to men. For marital status, there was also a statistically significant difference between the scores (p=0.034), the lowest being among married older adults when compared to the others. As for current occupation and exposure to COVID-19, older adults who marked the option "yes" had a higher score of symptoms of depression when compared to those who were not considered occupationally exposed to this disease (p=0.045) (Table 3).

Table 3 – Comparison between the general score of the scale for symptoms of depression and individual variables. Brazil, 2020. (n=900)

Variables	n	Mean Score	95% CI*	SD†	Test value‡	P value
Sex						
Female	661	4.3	3.9-4.6	3.6	t=-6.08 ‡	**p <0.01**
Male	239	2.5	2.0-2.9	4.5		
Brazil regions						
North	34	2.3	1.2-3.4	3.1	F=1.11 §	0.347
Northeast	209	3.8	3.2-4.5	4.7		
Center-West	80	3.7	2.8-4.6	4.0		
Southeast	504	3.9	3.5-4.3	4.4		
South	73	3.8	2.8-4.2	4.2		
Age (years)						
60 to 64 years old	511	4.0	3.6-4.4	4.3	F=1.58 §	0.205
65 to 69 years old	252	3.6	3.0-4.1	4.5		
70 years old and older	137	3.4	2.6-4.1	4.4		
Marital status						
Single	130	4.1	3.4-4-8	4.2	F=2.90 §	**0.034**
Married	513	3.4	3.1-3.8	3.9		
Separated/Divorced	171	4.4	3.7-5.2	5.1		
Widowed	86	4.3	3.1-5.4	5.5		
Income (minimum wage)						
Up to 4	218	4.2	3.6-4.9	4.7	t=1.63 ‡	0.103
5 or more	682	3.6	3.3-4.0	4.2		
Undergraduate degree						
No	131	4.0	3.1-4.9	5.4	t=0.57 ‡	0.567
Yes	769	3.8	3.5-4.0	4.2		
Currently working in the health field						
No	493	3.7	3.2-4.0	4.3	t=-1.12 ‡	0.262
Yes	407	4.0	3.5-4.4	4.4		
Occupation						
Non-health professional	581	3.7	3.3-4.0	4.3	F=1.70 §	0.165

Table 3 – Cont.

Variables	n	Mean Score	95% CI*	SD†	Test value‡	P value
Doctor	69	3.4	2.4-4.3	3.9		
Nursing professionals	138	4.5	3.6-5.4	5.2		
Other health professionals	112	3.9	3.1-4.6	3.8		
Current occupation exposes to COVID-19						
No	546	3.6	3.2-3.9	4.4	t=-2.01 ‡	**0.045**
Yes	354	4.2	3.7-4.6	4.3		
Social isolation						
No	61	3.4	2.2-4.6	4.8	t=-0.66 ‡	0.506
Yes	839	3.8	3.5-4.1	4.4		
Contact with people with COVID-19						
No	845	3.7	3.4-4.0	4.3	t=-1.76 ‡	0.077
Yes	55	4.8	3.5-6.0	4.9		
Use of mask						
Never or rarely	120	3.7	2.8-4.6	4.9	F=0.15 §	0.860
Sometimes or often	544	3.9	2.5-4.2	4.2		
Always	236	3.7	3.1-4.3	4.5		

*CI=confidence interval; †SD=standard deviation; ‡t=student's T test; §F=Anova.

Although there was no statistically significant difference, older nursing professionals (p=0.165) had a higher score for symptoms of depression when compared to other health professionals. As for the preventive measures adopted, although there is also no statistically significant difference, older adults who are in social isolation had a higher score of symptoms of depression when compared to those who are not. In an analysis of the association of individual variables with "presenting symptoms of depression", there was an association with sex (p=0.41), income (p=0.013) and the fact of having an undergraduate degree (0.046) (Table 4).

Table 4 – Association between having symptoms of depression and individual variables among older adults. Brazil, 2020. (n=900)

Variables	No	Yes	P value
	n (%; 95% CI) *	n (%; 95% CI) *	
Sex			
Female	593 (89.7; 88.0-92.5)	68 (10.3; 8.1-12.8)	**0.041** †
Male	225 (94.1; 90.5-96.6)	14 (5.9; 3.4-9.4)	
Age (years)			
60 to 69 years old	694 (91.0; 88.8-92.8)	69 (9.0; 7.1-11.2)	0.867 †
70 years old and older	124 (90.5; 84.7-94.6)	13 (9.5; 5.4-15.3)	
Marital status			
Single	121 (93.1; 87.7-96.6)	9 (6.9; 3.4-12.3)	0.165†
Married	472 (92.0; 89.4-94.1)	41 (8.0; 5.9-10.6)	
Separated/Divorced	149 (87.1; 81.5-91.6)	22 (12.9; 8.5-18.5)	
Widowed	76 (88.4; 80.3-93.9)	10 (11.6; 6.1-19.8)	

Table 4 – Cont.

Variables	No	Yes	P value
	n (%; 95% CI) *	n (%; 95% CI) *	
Income (minimum wage)			
Up to 4	189 (86.7;81.7-90.7)	29 (13.3; 9.3-18.3)	**0.013** †
5 or more	629 (92.2;90.0-94.1)	53 (7.8; 5.9-10.0)	
Undergraduate degree			
No	113 (86.3; 79.6-91.4)	18 (13.7; 8.6-20.5)	**0.046** †
Yes	705 (91.7; 89.6-93.5)	64 (8.3; 6.5-10.4)	
Occupation			
Non-health professional	528 (90.9; 88.3-93.0)	53 (9.1; 7.0-11.7)	0.369 ‡
Doctor	65 (94.2;86.6-98.1)	4 (5.8; 1.-13.4)	
Nursing professionals	121 (87.7; 81.4-92.4)	17 (12.3; 7.6-18.6)	
Other health professionals	104 (92.9; 86.9-96.6)	8 (7.1; 3.4-13.1)	
Current occupation exposes to COVID-19			
No	501 (91.8; 89.2-93.9)	45 (8.2; 6.1-10.8)	0.260 †
Yes	317 (89.5; 86.0-92.4)	37 (4.8; 2.9-7.4)	
Social isolation			
No	54 (88.5; 78.6-94.8)	7 (11.5; 5.1-21.4)	0.506 †
Yes	764 (91.1;89.0-92.9)	75 (8.9; 7.1-11.0)	
Contact with people with COVID-19			
No	769 (91.0; 88.9-92.8)	76 (9.0; 7.2-11.1)	0.633 †
Yes	49 (89.1; 78.7-95.5)	6 (10.9; 4.5-21.3)	
Use of mask			
Never	42 (95.5; 85.8-99.2)	2 (4.5; 0.8-14.2)	0.559 ‡
Fairly often	562 (90.6; 88.2-92.8)	58 (9.4; 7.2-11.8)	
Always	214 (90.7; 86.5-93.9)	22 (9.3; 6.1-13.6)	

*CI=confidence interval; †Chi-square test; ‡Fisher's exact test.

Income was the only variable that, after being inserted into the logistic regression model, remained as a predictor of depressive symptoms (OR=0.56; CI: 0.34-0.91; p=0.020), i.e., receiving five wages or more decreased the chances of having symptoms of depression among older adults in the sample in this study.

DISCUSSION

The present study identified the factors associated with symptoms of depression among older Brazilians during the COVID-19 pandemic, with an emphasis on sex, marital status, current occupation, income, and education. Although they were not statistically significant if associated with the symptoms of depression, using masks and social isolation were relevant in the study, given the adherence of most of participants in this COVID-19 pandemic context.

Regarding sex, most respondents were women. This situation can be justified by the fact that, in Brazil, in 2020, 30.2 million older adults are estimated, and, of these, 16.9 million (55.9%) are women.[14] It appears that there is a greater interest in older adults regarding using information and communication technologies[15], which may have contributed to a greater adherence to completing the research instrument.

It was found, with regard to education and income, that most respondents attended graduate school and received more than five minimum wages. This condition reinforces that a large part of the population is not yet digitally included, especially that located in the lowest social strata.[16]

As for using masks, most stated that they use them with some frequency. This situation can be clarified due to the fact that since April 2, 2020 the Ministry of Health has recommended using homemade masks by the population.[17] Moreover, some initiatives, such as the Primer on Health Care for older adults and COVID-19, have encouraged using masks by older adults, with the aim of clarifying and guiding this population as well as their families and/or caregivers during the pandemic period.[18]

Almost all respondents said they were in social isolation. It is essential to reinforce that social distancing does not mean abandonment. Each family, together with older adults, must debate and ponder the strategies of this distance since, at the present moment, physical distance, in addition to being a protection strategy, represent an act of love, consideration, and affection.[19]

According to the responses to the PHQ-9, most older adults have had no symptoms of depression or minimal symptoms in the past few weeks. However, 9.1% had moderate, or severe symptoms of depression.

In a survey of the psychological status of 1,556 older adults in China during the COVID-19 period, 602 men and 954 women, the findings indicated that 37.1% experienced depression and anxiety, translating to a rate four times higher than the than that found in the present study. However, gender differences in emotional response have also been identified, with women experiencing more anxiety and depression than men, which is similar to current findings.[20]

In this directive, monitoring older adults' mental health is extremely relevant, since, especially during pandemic situations, some have difficulties resulting from distance due to the instability of affective bonds, which can cause anguish, loneliness, and deep sadness. This condition can be even worse for those who live alone, where greater emotional vulnerability can lead to depression, with consequent suicidal ideation or suicide.[21]

It should be noted that some of the participants indicated a risk of suicidal ideation. In this line, evidence points out that older adults are already more susceptible to melancholy and restlessness, which can even increase the risk of suicide during the pandemic, especially due to a relapse of a previous depressive disorder, as happened with five older adults who committed suicide in India. Therefore, older adults who already suffer from mental disorders are more vulnerable to the pandemic and the social consequences of COVID-19, which even favors suicide.[22] Therefore, the importance of studies and strategies related to mental health emerges, in order to minimize such effects.

It should be noted that, among the findings, women showed more symptoms of depression compared to men, which corroborates scientific literature.

In another investigation in China on the levels of psychological impact, anxiety, depression and stress during the initial stage of the COVID-19 outbreak among the general public, 16.5% participants reported depressive symptoms ranging from moderate to severe; moreover, females were also significantly associated with a greater psychological impact of the outbreak and with higher levels of stress, anxiety, and depression,[23] which is also in line with current research.

Furthermore, married older adults had a lower score for depressive symptoms. In this directive, a population-based study in southern Brazil that measured the prevalence and identified the factors associated with the occurrence of depression among older adults, in addition to identifying a higher prevalence ratio for depression in women, also found it among singles,[24] which doubly resembles the current results. It is noteworthy that in addition to the singles, in the present study, higher depression scores were found between the separated and widowed.

Therefore, not being married generally leads older adults to live alone, which can promote loneliness, especially during periods of social isolation and, consequently, generate depressive

symptoms. This perspective is in line with a study on older adults who cared for other older adults, which revealed that those who were lonely caregivers and who had depressive symptoms were more likely to develop fragility, as they felt less fortunate to participate in groups, interact with other people and practice physical activities, which directly impacts physical health and psychological well-being,[25] as in COVID-19 times.

It was evident that older adults with an occupation that exposed them to COVID-19 had more symptoms of depression, which is in line with the results of a survey of 4,121 full-time employees in which 80% of respondents revealed to be afraid and a certain concern about the disease. Yet, the fear of the disease was significantly correlated with psychological suffering.[26]

It is noteworthy that, nursing professionals had a higher score for symptoms of depression when compared to other health professionals. In the current pandemic scenario, they have experienced high levels of anxiety, fear of falling ill and loneliness, which culminate in mental disorders, depression and Burnout Syndrome.

A study with Brazilian nursing professionals revealed that the feelings most expressed by them during the pandemic were: anxiety related to the lack of Personal Protective Equipment (PPE), pressure from the head and news in the media; stress with high demand and increased deaths; fear of the risk of becoming infected and transmitting it to family members; ambivalence, because in the same way they are applauded they are also discriminated against; depression due to loneliness, withdrawal from family and death of professional colleagues and exhaustion or exhaustion due to the volume of work.[27]

Exhaustion was also reported in a study carried out with 2707 health professionals in several countries, which revealed that 51.4% of respondents feel exhausted because of work during the COVID-19 pandemic, and that the professional burnout is relatively higher in nurses, when compared to doctors. The syndrome was significantly associated with the impact on daily activities, with the feeling of pressure at work and exposure to infected patients, causing damage to the mental health of these professionals.[28]

In another perspective, the present study showed that older adults in social isolation had a higher score for symptoms of depression as an important adverse consequence of the pandemic. The increase in social isolation and, consequently, the feeling of loneliness is reflected and strongly associated with depression, anxiety, self-harm, and suicide attempts. Another relevant aspect is the impact of health measures on the economy, increasing unemployment, financial insecurity and poverty and directly affecting the population's mental health, in particular that of people in vulnerable groups such as older adults.[29]

Income was shown to be a predictor of depression, as those with an income above five wages were less likely to have depressive symptoms.

Data from a study that compared people affected and unaffected by quarantine in China[30] corroborate the results of the present research. Thus,1,593 Chinese were interviewed and only 15.3% suffered economic losses, 13.6% received support or financial assistance from the community or government; however, not being affected by the quarantine was an element that showed a statistically significant association with the non-receipt of financial aid, revealing that one of the impacts of the quarantine may be financial fragility. And yet, the same study revealed that people who did not experience economic losses showed significantly lower levels of anxiety and depression than the others, in addition to the significant association between occupational status and average family income with the self scale score-evaluation of depression.[30]

On the other hand, not having a degree was associated with a higher frequency of depressive symptoms. This result is similar to that found in a study carried out among the population in China in

the initial stage of the COVID-19 pandemic, in which people with less education had more symptoms of depression when compared to those with higher education.[23]

This study investigated the association of individual factors and symptoms of depression in elderly Brazilians. It is noteworthy that the pandemic of COVID-19 may be affecting the mental health of elderly Brazilians, especially with regard to depressive symptoms in this portion of the population, reinforcing the importance of studies and assistance strategies in this regard. However, it is considered as a limitation the fact that the questionnaire was answered by the participant giving his global perception of the symptoms of depression; therefore, only a clinical interview can assess, with quality, the actual presence of MDD.

CONCLUSION

Most older adults did not show symptoms of depression; however, the main factors associated with this condition during the COVID-19 pandemic were sex, marital status, income, and education. Women and older adults who have an occupation with exposure to COVID-19 had higher depression scores and married people lower values. Not having a degree was associated with a higher frequency between having depressive symptoms; on the other hand, receiving five salaries, or more, decreased the chances of this symptom.

Although they were not associated with symptoms of depression, using masks and social isolation were relevant given the adherence of most of participants in this COVID-19 pandemic context.

It is noteworthy that this study may provide knowledge of the relationship between social isolation and the pandemic with depression in elderly Brazilians and, as a benefit, enable the development of guidelines and public policies aimed at this population with regard to prevention and minimization of mental health problems.

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NOTES

ORIGIN OF THE ARTICLE

It was extracted from a research project entitled "*Estudo Multinacional sobre a prática de uso de máscara facial entre o público em geral durante a pandemia de COVID-19*" at *Universidade Federal Fluminense* in 2020.

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FUNDING INFORMATION

The article was funded by CNPq - *Conselho Nacional de Desenvolvimento Científico e Tecnológico*, Brazil, Process 401371/2020-4.

APPROVAL OF ETHICS COMMITTEE IN RESEARCH

This article was approved by the Brazilian National Research Ethics Commission under Opinion 3.971.512/2020 and CAAE (*Certificado de Apresentação para Apreciação Ética* - Certificate of Presentation for Ethical Consideration) 30572120.0.0000.0008.

CONFLICT OF INTEREST

There is no conflict of interest.

HISTORICAL

Received: August 13, 2020.
Approved: October 21, 2020.

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