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Depressive symptoms among the elderly in São Paulo city, Brazil: prevalence and associated factors (SABE Study)

Sintomas depressivos em idosos do município de São Paulo, Brasil: prevalência e fatores associados (Estudo SABE)

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ABSTRACT: ***Objective:*** To estimate the prevalence of depressive symptoms in the elderly in São Paulo city, Brazil (SABE Study), in 2006 and to identify risk factors associated with the 2006 prevalence and protective factors among those who did not have depressive symptoms in the assessments conducted in 2000 and 2006. ***Methods:*** In this cross-sectional and longitudinal study, the Geriatric Depression Scale was used for inclusion in the cohort in 2000 and also in 2006. ***Results:*** The prevalence of depressive symptoms in 2006 was 14.2% (95%CI 11.8 – 16.7), and 74.8% of the participants did not present depressive symptoms in 2000 neither in 2006. Logistic regression models were constructed, with different groups of variables (socio-demographic variables, status and perception of health and memory) adjusted for sex and age. In the final logistic regression model, the following factors were associated with depressive symptoms: self-assessment of vision, oral health, memory and of general health as poor, dependence for basic activities of daily living, and moderate or severe family dysfunction. Protective factors against presenting depressive symptoms in the 2000 and 2006 phases were: being male, absence of pulmonary disease and positive self-assessment of health. ***Conclusion:*** Depressive symptoms were frequent among the elderly, and were associated with health problems, dependence and family dysfunction. These factors should be addressed in health policy planning for the care of these elderly.

Keywords: Aged. Depression. Aging. Prevalence. Health status. Activities of daily living.

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**in memoriam.*

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RESUMO: ***Objetivo:*** Estimar a prevalência de sintomas depressivos em idosos do município de São Paulo, Brasil (Estudo SABE), em 2006 e identificar fatores de risco associados a essa prevalência em 2006 e fatores de proteção entre os idosos que não apresentaram sintomas depressivos nas avaliações realizadas em 2000 e 2006. ***Métodos:*** Estudo transversal e longitudinal que utilizou a Escala de Depressão Geriátrica na inclusão da coorte em 2000 e em 2006. ***Resultados:*** A prevalência de sintomas depressivos em 2006 foi de 14,2% (IC95% 11,8 – 16,7) e 74,8% dos participantes não apresentaram sintomas depressivos em 2000 nem em 2006. Foram construídos modelos de regressão logística, tendo como exposição diferentes grupos de variáveis (sociodemográficas; condições e percepção de saúde e memória) ajustando-se para sexo e idade. No modelo final da regressão logística, associaram-se a sintomas depressivos: autoavaliação da visão, da saúde bucal, da memória e da saúde geral como ruins, dependência para atividades básicas de vida diária e disfunção familiar moderada ou grave. Os fatores de proteção para não ter apresentado sintomas depressivos nas fases de 2000 e 2006 foram: sexo masculino, não referir doença pulmonar e avaliar positivamente a saúde. ***Conclusão:*** Sintomas depressivos nos idosos estudados foram frequentes e se associaram com piores condições de saúde, dependência e disfunção familiar e tais fatores devem ser considerados no planejamento de políticas de saúde para prestação de cuidados a esses idosos.

Palavras-chave: Idoso. Depressão. Envelhecimento. Prevalência. Nível de saúde. Atividades cotidianas.

INTRODUCTION

Depression symptoms have a high prevalence among the elderly, presenting a great variability of these symptoms in this age group, probably due to different diagnostic criteria adopted and the characteristics of the studied population[1-6].

Among community-dwelling older adults, the prevalence of depression and depression symptoms ranged from 6.3 to 63.0%[1-3,7,8]. In Brazilian population studies using screening instruments for depression symptoms, prevalence rates were found ranging from 13.0 to 38.0%[4,5].

Depression symptoms in the elderly were associated with different factors such as loss of life quality[6], worse socioeconomic condition[2,6-9], presence of common age-related diseases[10], increased risk of mortality[11,12], decline in functional capacity[12], and burden on the family and health services[13].

This research is a subproject of the SABE Study[14,15] and aimed at estimating the prevalence of depression symptoms in the elderly of São Paulo city in 2006 as well as identifying risk factors associated with the prevalence in 2006, in addition to protective factors among the elderly who did not present depression symptoms in the assessments conducted in 2000 and 2006.

METHODS

A cross-sectional and longitudinal study was realized from the representative probability sample of elderly living in São Paulo (SABE Study). Among the 1,115 participants interviewed

in 2006, 972 elderly who answered the Geriatric Depression Scale (GDS) to detect depression symptoms were analyzed. In the longitudinal analysis, we included 945 elderly who responded to the GDS in the two phases analyzed.

INSTRUMENTS

The primary instrument for data collection of SABE Study was a household survey with questions related to three modules: sociodemographic, health conditions, and use of health-care services. We selected appropriate variables to this study and the following instruments:

- GDS[16,17]: 15-item scale with cutoff from 6 to 10 points for mild depression and 11 or more for severe depression, according to Almeida and Almeida[18];
- Mini-Mental State Examination (MMSE): modified version of the MMSE developed by Folstein et al.[20] and validated in Chile by Icaza and Albala[19]. It established the cutoff in 12/13[19];
- Pfeffer Functional Activities Questionnaire: developed by Pfeffer et al.[21]; it consists of ten items and evaluates the functionality by means of the degree of independence for the performance of instrumental activities of daily living, with scores ranging from 0 to 30, cutoff point of 5/6, and higher scores indicating greater impairment;
- Katz Index for activities of daily living[22]: used to assess the autonomy reported by the individual in activities related to self-care. Three types of scores were used, indicating the different levels of ability: independent, need some assistance, and dependent;
- Lawton Index for instrumental activities of daily living[23]: used to evaluate the reported autonomy in instrumental activities,
- The Family Apgar: instrument with five questions to measure the satisfaction of family members in relation to five components considered the basis of union and functionality of any family: adaptation, companionship, development, affectivity, and response capacity[24,25]. The results obtained were converted into scores starting from a range of responses with five options for each component to be evaluated: "always" corresponds to score = 4, "often" = 3, "sometimes" = 2, "seldom" = 1, and "never" = 0. The sum of the obtained values corresponds to the score that suggests the quality of family functionality[25].

PROCEDURE

Elderly who participated in the assessments conducted in 2000 and 2006 and who had responded to the GDS were selected for this study. It is noteworthy that those with cognitive impairment according to the MMSE, associated with functional impairment identified by Pfeffer questionnaire did not respond to GDS.

DATA ANALYSIS

Data were analyzed using STATA 10.0[26] program in survey function, which allows incorporating aspects related to complex sampling design. In the bivariate analysis, we used the Rao–Scott test, which allows adjusting for sampling design, which is recommended in studies with complex samples[27]. For the analysis in the longitudinal study, we used the merge function of STATA 10.0[26] to merge the databases related to both 2000 and 2006 cohorts. We conducted logistic regression stepwise-backward type, being included in the models all the variables that presented association with the outcomes at a significance level of 90% ($p < 0.10$) in the bivariate analysis, and other variables of theoretical relevance to control free of confounding associations. The variance inflation factor (VIF) was used to evaluate the presence of collinearity between variables in the different logistic regression models[28].

ETHICAL CONSIDERATIONS

The "SABE Project 2005 - Health, Welfare and Aging: the conditions of health and life of the elderly in São Paulo" (Research Protocol number 1345) was approved by the Research Ethics Committee of the School of Public Health of the Universidade de São Paulo (COEP).

RESULTS

CROSS-SECTIONAL STUDY: PREVALENCE AND ASSOCIATED FACTORS

The prevalence of depression symptoms among the elderly of the A_{06} cohort was 14.2% with 95% confidence interval (95%CI) of 11.8 to 16.7, with 11.2% of mild depression symptoms and 3% severe depression symptoms. Studying the association between depression symptoms and sociodemographic variables, we found that the presence of depression symptoms was more frequent among women ($p < 0.01$), among those less educated (< 0.05) and among those who perceive their income as insufficient for daily expenses ($p < 0.001$). The occurrence of depression symptoms was also significantly associated with the following: a lower frequency of attendance in religious communities ($p < 0.01$), greater number of referred diseases ($p < 0.01$), have reported diabetes ($p < 0.05$), osteoarticular diseases ($p < 0.05$), heart disease ($p < 0.01$), lung diseases ($p < 0.05$), neoplasm ($p < 0.05$), stroke ($p < 0.05$), previous depression ($p < 0.01$), and increased everyday use of medicines ($p < 0.001$). We observed prevalence of higher depression symptoms among the elderly who evaluated their visual and auditory functioning and oral health as poor ($p < 0.01$).

The occurrence of depression symptoms also associated with cognitive impairment ($p < 0.01$), with worse self-assessment in relation to memory ($p < 0.001$), with report of worsening memory loss compared to the previous year ($p < 0.001$), with worse perception in relation to own health ($p < 0.001$), and worse assessment of health status compared to a year ago ($p < 0.001$). Regarding functional capacity, there was an association of depression symptoms with worse performance in basic activities ($p < 0.001$) and instrumental activities of daily living ($p < 0.001$), and worse family functioning ($p < 0.001$).

We used logistic regression to determine the association of cases and noncases of depression symptoms (2006) with different groups of variables (sociodemographic, self-reported diseases, health conditions, perception of health and memory, reported functional capacity) that associated with depression symptoms in the bivariate analysis ($p < 0.10$). The final model was composed of all the variables that were significant in previous models. All models were adjusted for age and gender.

The following variables remained associated with a higher risk for depression symptoms: self-report of vision problems with odds ratio (OR) equal to 2.83 (95%CI 1.52 – 5.29); oral health (OR = 1.77; 95%CI 1.08 – 2.92), self-perception of health as regular (OR = 2.43; 95%CI 1.45 – 4.07) or poor (OR = 5.04; 95%CI 2.15 – 11.83); memory assessment as regular (OR = 2.28; 95%CI 1.45 – 4.07) or poor (OR = 6.82; 95%CI 2.15 – 11.83) , family dysfunction as moderate (OR = 2.98; 95%CI 1.09 – 8.10) or severe (OR = 3.45; 95%CI 1.60 – 7.43); dependence on one or two basic activities of daily living (OR = 2.03; 95%CI 1.40 – 5.04) and in three or more of the basic activities (OR = 2.65; 95%CI 1.09 – 8.10) (Table 1).

LONGITUDINAL STUDY: ANALYSIS OF PROTECTIVE FACTORS

In order to identify protective factors, individuals who did not present depression symptoms in 2000 or 2006 (n = 707) were selected. Those individuals were studied in relation to sociodemographic characteristics, health status, and performance of basic and instrumental activities of daily living.

It was found that 25.2% (n = 238) of the elderly presented depression symptoms in both evaluations or at least in one of them, and 74.8% did not present symptoms in any of the time points of the study. In 2000, 9.9% of the elderly had depression symptoms, and in 2006 this percentage was 7.7% (Table 2).

In the comparison of depression symptoms' occurrence among male and female, it was observed that presenting depression symptoms in both time points of the study was more frequent among women ($p < 0.001$).

The absence of depression symptoms in both assessments (n = 707) was associated with male gender, higher level of education, higher income, and perceiving income as sufficient for expenses. Fewer self-reported diseases, fewer medicine use, and not presenting hypertension and lung diseases have a statistically significant association with the absence of depression symptoms, also suggesting that better health status may act as a protective

Table 1. Logistic regression: prevalence of depression symptoms and sociodemographic variables, health conditions, self-assessment of health and memory, and performance on the instrumental activities of daily living—SABE study cohort A06 (n = 972).

Variables	Model 1	Model 2	Model 3	Model 4	Final Model
	OR (95%CI)	OR (95%CI)	OR (95%CI)	OR (95%CI)	OR (95%CI)
Age (continuous)	1.03 (0.99 – 1.06)	1.02 (0.99 – 1.06)	0.99 (0.96 – 1.03)	1.01 (0.98 – 1.05)	0.99 (0.95 – 1.03)
Gender					
Female	1	1	1	1	1
Male	2.38 (1.46 – 3.87)	1.88 (1.17 – 3.03)	1.52 (1.01 – 2.28)	1.68 (1.05 – 2.68)	1.41 (0.88 – 2.28)
Perception of income					
Sufficient	1				
Insufficient	2.31 (1.52 –3.52)				
Religious activity					
Participate	1				
Do not participate	2.24 (1.37 – 3.68)				
Previous Stroke					
No		1			
Yes		2.38 (1.28 – 4.44)			
Heart diseases					
No		1			
Yes		1.58 (1.04 – 2.31)			
Previous depression					
No		1			
Yes		2.28 (1.33 – 3.90)			
Oral health					
No			1		1
Yes			2.53 (1.61 – 3.93)		1.77 (1.08 – 2.92)

Continue...

Table 1. Continuation.

Variables	Model 1	Model 2	Model 3	Model 4	Final Model
	OR (95%CI)	OR (95%CI)	OR (95%CI)	OR (95%CI)	OR (95%CI)
Vision					
Excellent/ good			1		1
Moderate			1.27 (0.74 – 2.19)		1.02 (0.56 – 1.88)
Regular/poor			4.63 (2.33 – 8.49)		2.83 (1.52 – 5.29)
BADL					
Independent			1		1
Dependent in 1 or 2			2.41 (1.46 – 3.99)		2.03 (1.40 – 5.04)
Dependent in 3 or +			3.46 (1.97 – 6.06)		2.65 (1.09 – 8.10)
Self-assessment of health					
Good				1	1
Regular				2.85 (1.71 – 4.77)	2.43 (1.45 – 4.07)
Poor				7.93 (3.51 – 17.89)	5.04 (2.15 – 11.83)
Self-assessment of memory					
Good				1	1
Regular				2.41(1.61 – 3.63)	2.28 (1.45 – 4.07)
Poor				7.91 (3.52 – 17.78)	6.82 (2.15 – 11.83)
Family Dysfunctionality familiar					
Mild				1	1
Moderate				3.35(1.54 – 7.30)	2.98 (1.09 – 8.10)
Severe				3.92 (2.00 – 7.65)	3.45 (1.60 – 7.43)

OR: *odds ratio*; 95%CI: 95% confidence interval; BADL: basic activity of daily living.

factor for this symptomatology ($p < 0.001$). There was a significant association between positive assessment of health and memory and the absence of depression symptoms in 2000 and 2006. There was a lower percentage of impairment in the performance of instrumental activities of daily living ($p < 0.0001$) among those who did not present depression symptoms in both assessments.

Female gender (OR = 1.75; 95%CI 1.24 – 2.47), presence of chronic lung disease (OR = 2.07; 95%CI 1.33 – 3.22), self-perception of health as regular (OR = 2.89; 95%CI 1.96 – 4.29) or poor (OR = 5.43; 95%CI 2.74 – 10.77), remained independently associated with the presence of depression symptoms, after using the logistic regression also in subsequent models, composed of sociodemographic variables, followed by those related to health, to self-assessments of health and memory, and finally by those related to the performance in basic and instrumental activities of daily living (Table 3).

DISCUSSION

DEPRESSION SYMPTOMS

The prevalence of depression symptoms was 14.5% (95%CI 11.8 – 16.7), relatively lower than those described in the vast majority of national population studies that also used screening tools for depression symptoms. This great variability was probably due not only to differences in diagnostic criteria and applied tools but also to the characteristics of each studied population[3-5,8,29-36].

In Brazil, back in the 1990s, Veras and Coutinho[29] observed different percentages (20.9, 23.0, and 36.8%) of depression symptoms in neighborhoods with populations that differed from a socioeconomic standpoint. They used the SHORT-CARE, but according to them this is an instrument with which we must be careful when choosing the cutoff point to investigate depression symptoms due to its low specificity and sensitivity, which were detected in validity and reliability studies. Cerqueira[30] studied the first cohort of SABE study in 2000 with the same instrument (GDS-15) and reported

Table 2. Distribution of the population of cohorts A00 and A06, according to the presence or absence of depression symptoms (n = 945).

Depression symptoms	2006		Total
	Noncase	Case	
2000	%	%	%
Noncase	74.8	7.7	82.5
Case	9.9	7.6	17.5
total	84.7	15.3	100.0

Table 3. Logistic Regression of absence of depression symptoms in cohorts A00 and A06 and sociodemographic variables, health conditions, self-assessment of health and memory, and performance in instrumental activities of daily living—SABE study, cohorts A00 and A06 (n = 945).

Variables	Model 1	Model 2	Model 3	Model 4	Final Model
	OR (95%CI)	OR (95%CI)	OR (95%CI)	OR (95%CI)	OR (95%CI)
Age (continuous)	1.02 (0.99 – 1.14)	1.00 (0.97 – 1.02)	0.99 (0.97 – 1.02)	1.01 (0.99 – 1.04)	0.99 (0.93 – 1.02)
Gender					
Female	1	1	1	1	1
Male	1.64 (1.14 – 2.29)	1.70 (1.20 – 2.40)	1.62 (1.14 – 2.30)	2.02 (1.29 – 3.14)	1.75 (1.24 – 2.47)
Income (MW)					
< 1	1				
1–2.99	1.37 (0.72 – 2.60)				
3–4.99	2.13 (1.03 – 4.38)				
5 or +	1.99 (1.00 – 3.95)				
Hypertension					
Yes		1			
No		1.48 (1.02 – 2.13)			
Lung diseases					
Yes		1			1
No		2.18 (1.27 – 2.37)			2.07 (1.33 – 3.22)
Osteoarticular diseases					
Yes		1			
No		1.72 (1.27 – 2.37)			

Continue...

Table 3. Continuation.

Variables	Model 1	Model 2	Model 3	Model 4	Final Model
	OR (95%CI)	OR (95%CI)	OR (95%CI)	OR (95%CI)	OR (95%CI)
Self-assessment of health					
Good			1		1
Regular			2.50 (1.68 – 3.69)		2.89 (1.96 – 4.29)
Poor			4.69 (2.27 – 9.69)		5.43 (2.74 – 10.77)
Self-assessment of memory					
Good			1		
Regular			5.09 (1.89 – 13.66)		
Poor			8.03 (3.19 – 20.18)		
Instrumental activities of daily living					
Dependent in 3 or +				1	
Dependent in 1 or 2				2.12 (1.03 – 4.37)	
Independent				2.99 (142 – 6.27)	

OR: *odds ratio*; 95%CI: 95% confidence interval; MW: minimum wage.

prevalence of 18.1%. In the case of the same population studied here, the observed difference can be attributed to the population aging, once individuals aged 60–64 years were also analyzed in that study, and research-related differences in the prevalence of depression symptoms in different age groups[31-33]. A much higher prevalence (38.5%) compared to this research was described by Castro-Costa et al.[5] in a small country town in Minas Gerais, using the General Health Questionnaire (GHQ), probably because this tool is not specific for depression symptoms[37]. Lima et al.[34] evaluated elderly aged 65 or more in a specific neighborhood with characteristics typical of São Paulo city and registered prevalence of 21.1%, using Short Psychiatric Evaluation Schedule[35] and GDS[16]. Barcelos-Ferreira et al.[4] evaluated elderly aged 60 or more in São Paulo, divided

in three different socioeconomic levels, with a representative sample of the city similar to this study, and obtained a prevalence of 13% of depression symptoms. This result most resembles that obtained in this study.

In the United States, the Epidemiological Catchment Area Study (ECA)[38] showed a prevalence of 15%. However, other international studies described a higher prevalence than that obtained in this study, like the Share study[39], a European study that applied the Euro-D. In this study, the rates ranged from 18.5 to 36.8%, probably due to the instrument used and the specific characteristics of European populations.

The results related to the prevalence of depression symptoms in other international studies[3,7,8,32,36] differ from that of this research, once they investigated the socioeconomic impact on the occurrence of these symptoms, focusing only on low-income populations. Borjoquez-Chapella et al.[8] studied low-income elderly in Mexico and recorded a prevalence of 43% by means of CES-D. Wada et al.[36] investigated depression symptoms in four small country communities in Japan using the GDS and found a prevalence of 33.5%. A similar study was developed in Korea by Kim et al.[3] also using the GDS with elderly living in urban and rural areas. This study obtained a prevalence of 63%. Torija et al.[7] evaluated elderly in the district area of Guadalajara, Mexico, which included urban and rural areas, and found a prevalence of 19.7% of depression symptoms using the GDS. Chong et al.[32] investigated the prevalence of depression symptoms in three different communities in southern Taiwan (rural, semi-urban, and urban) and recorded a prevalence of 15.3% using the GMS-AGECAT.

FACTORS ASSOCIATED WITH DEPRESSION SYMPTOMS

The results of logistic regression of this study indicated a significant association of depression symptoms with some health conditions (self-report of poor visual and oral health), dependence for basic activities of daily living, self-evaluation of memory and health as poor, and dysfunctional family (moderate or severe).

The association of depression symptoms with the decline in visual function, according to Ribeiro et al.[40] and Luiz et al.[41], often affects the performance of daily activities, restricts social participation, and limits performance in activities that the elderly wish or need to perform, possibly leading to a decrease in the quality of life and high rates of depression in this population. Another frequent problem in aging, but rarely addressed in the literature, is oral health, although it is known that, in this period of life, oral hygiene may be reduced and oral diseases in the elderly may increase. Stressful events, psychological disorders, depression symptoms, or the place of residence may influence, directly or indirectly, the oral health of the individual[42].

Other studies corroborate the findings of this research in relation to the association of depression symptoms and dependence for basic activities of daily living[12,34,36]. Although these results are from a cross-sectional study, this important association

indicates the impact that the functional limitations may have on the state of mind of the elderly and vice versa.

An association of depression symptoms with worst self-assessment of memory was observed; however, it was found that the evaluation of the memory as poor has not indicated the presence of cognitive impairment, according to the evaluation performed. Among the high percentage (43%) of the elderly who evaluated their memory performance as regular or poor, only 8.1% scored for cognitive impairment in the MMSE. Some authors suggest that the complaints of memory performance may be more directly linked to psychological factors such as anxiety, depression, and high self-demand[43], which seem to be confirmed in this study. Negative assessment of memory increased the risk for depression symptoms by 6.82 times compared to the elderly that positively assessed its mnemonic performance.

Self-perception of health as poor seems to be a marker for the presence of depression symptoms. The self-assessment of health by means of a single question has been widely used in population survey[44,45]. Barros et al.[45] reported that the self-assessment of the individual seems to take into account the overall signs and symptoms of disease (diagnosed or not by health professionals) and the impact of these conditions on the physical, mental, and social well-being of that individual. Studies indicate that the presence of chronic diseases is a strong determinant for the perception of health as poor[45-47].

The association between the perception of family dysfunction and depression symptoms also seem to compose the set of perceptions synthesized in the self-rated health. Torres et al.[48] discuss the difficulty of the current family structure to provide care for the elderly becoming dependent and the consequences on family dynamics and quality of life of the elderly. This research indicates that the elderly who is aware of the family difficulty may present depression symptoms more often. However, it is noteworthy that this is a cross-sectional study, which cannot reveal the direction of that influence.

With the objective of identifying the protective factors, the following variables remained associated with the absence of depression symptoms in 2000 and 2006: male gender, no mention of lung disease, and positive assessment of health, reflecting a reversal in the identified risk factors.

Several population studies indicate higher frequency of depression symptoms in female gender[1,6,9,49], suggesting greater social vulnerability in women. It is also common for women the presence of lower levels of education and income, to live alone, to present more physical illnesses, and to have greater functional limitations. This description is very similar to the data from this study, which may indicate a condition of vulnerability in this population. It is worth noting that Cerqueira[30] had already pointed out this unfavorable condition for women since the first evaluation of the SABE study.

The absence of chronic lung disease and all symptoms associated with it and not presenting the subsequent social damage may explain the absence of depression symptoms among those people, as also referred by Van Manen et al.[50]. Positive self-assessment of health associated with absence of depression symptoms may be representing better health and life of

these individuals. This study revealed that, among the elderly who did not present depression symptoms in any of the evaluations (2000 and 2006), 83% have reported absence of diseases, and the prevalence of depression symptoms increased the greater the number of referred diseases. Among the elderly who did not present depression symptoms, most had autonomy for basic and instrumental activities of daily living. Thus, a positive self-rated health seems to correspond to a good health condition and functionality, and all of these conditions may be considered as protective factors in the occurrence of depression symptoms.

It is worth noting that in this study there was no significant association of depression symptoms and age. Many other studies are also inconclusive in relation to this aspect, but this is still a controversial and relevant topic to the field. The association of depression with increasing age was observed in several studies[32,33]. Old age is the phase in which individuals are very exposed to losses and adverse events, on the other hand, there is data showing a decrease or stabilization in the occurrence of depression symptoms with advancing age, and the rates may achieve a peak over the more advanced ages[31]. Nguyen et al.[51] also studied the relationship between age and depression symptoms and found an association between increasing age with more somatic symptoms and physical discomfort, especially in cohorts with 70 years or more. The age alone does not increase the risk of depression; however, the effects of age on depression symptoms can be attributed to common health problems and disability in the elderly. In this study, we observed a similar situation: there was no association of depression symptoms with increasing age, but there was an association of depression symptoms with chronic physical multimorbidity, common in aging, as well as with the higher use of drugs and self-perception of health as poor.

LIMITATIONS

The tool applied to assess depressive symptoms (GDS[17]) in elderly in SABE study detects the occurrence of these symptoms in the last month, thus limiting the analysis of depressive symptoms throughout their lives. Therefore, in addition to this characteristic of the scale, the cyclical nature of depression and depressive symptoms suggests that elderly might have presented depressive symptoms between the different time points of the study, preventing from estimating the incidence of depressive symptoms with this study design.

CONCLUSION

The data obtained in this study corroborate the literature of the field and reveal the significant prevalence of depression among the elderly. It was observed that there are factors that favor elderly's vulnerability to present depressive symptoms as worse living conditions (low income), which can result in more difficult access to health services, lower emotional

reserves to deal with crisis situations, and absence of satisfactory support network. It was also remarkable the association of depressive symptoms to the health condition of the elderly: higher occurrence of diseases, negative perception of their health and memory, dependence for activities of daily living, and perception of family dysfunction.

There is a belief that to ensure a non-debilitating health condition and active aging, the individual must be properly assisted, revealing the importance of planning and implementation of social and health policies and programs for the care of the elderly, once the majority of the diseases and disability causes are subject to preventive or control actions.

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