Negative self-assessment of health status among adults in Brazil

Autoavaliação negativa do estado de saúde entre adultos no Brasil

Autoevaluación negativa del estado de salud entre adultos en Brasil

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REVISA

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RESUMO

Objetivo: Descrever a autoavaliação negativa do estado de saúde entre adultos no Brasil no período de 2011 a 2020. **Método:** Estudo ecológico descritivo de série temporal realizado com dados secundários oriundos da Vigilância de Fatores de Risco e Proteção para Doenças Crônicas por Inquérito Telefônico (VIGITEL). As variáveis consideradas foram: ano, região de residência, capitais, sexo, idade e escolaridade. **Resultados:** No período ocorreu uma redução das taxas de adultos brasileiros com autoavaliação negativa do estado de saúde. A região Norte apresentou o maior percentual de autoavaliação negativa de saúde (3,9%). A frequência de autoavaliação negativa do estado de saúde foi maior nas mulheres (4,9%), entre as pessoas na faixa etária de 65 anos ou mais e em adultos com menor escolaridade (7,5%). **Conclusão:** As mulheres, adultos com mais idade e com menor grau de escolaridade tem uma maior autoavaliação negativa de saúde.

Descritores: Autoavaliação; Avaliação em Saúde; Saúde do Adulto; Epidemiologia Descritiva.

ABSTRACT

Objective: To describe the negative self-assessment of health status among adults in Brazil from 2011 to 2020. **Method:** Descriptive ecological study of time series conducted with secondary data from the Surveillance of Risk and Protection Factors for Chronic Diseases by Telephone Survey (VIGITEL). The variables considered were: year, region of residence, capital, sex, age, and education. **Results:** In the period there was a reduction in the rates of Brazilian adults with negative self-assessment of health status. The North region presented the highest percentage of negative self-rated health (3.9%). The frequency of negative self-assessment of health status was higher in women (4.9%), among people aged 65 years or more and in adults with lower education (7.5%). **Conclusion:** Women, adults with older age and lower level of education have a higher negative self-rated health.

Descriptors: Self-Assessment; Health Evaluation; Adult Health; Epidemiology, Descriptive.

RESUMEN

Objetivo: Describir la autoevaluación negativa del estado de salud entre adultos en Brasil de 2011 a 2020. **Método**: Estudio descriptivo de serie temporal ecológica realizado con datos secundarios de la Vigilancia de Factores de Riesgo y Protección para Enfermedades Crónicas por Encuesta Telefónica (VIGITEL). Las variables consideradas fueron: año, región de residencia, capitales, sexo, edad y escolaridad. **Resultados**: Durante el período, hubo una reducción en las tasas de adultos brasileños con estado de salud autopercibido negativo. La región Norte presentó el mayor porcentaje de salud autoevaluada negativa (3,9%). La frecuencia de autoevaluación negativa del estado de salud fue mayor entre las mujeres (4,9%), entre las personas de 65 años o más y entre los adultos con menor escolaridad (7,5%). **Conclusión**: Las mujeres, los adultos mayores y los adultos con menor nivel educativo tienen una mayor autopercepción negativa de salud.

Descriptores: Autoevaluación; Evaluación en Salud; Salud del Adulto; Epidemiología

ORIGINAL

Introduction

Self-assessment of health (SAH), known as the perspective that the individual has about his own state, whether positive or negative,[1] has been frequently used in large population surveys.[2-3] Unlike clinical evaluation, where the results are obtained through examinations and professional analysis, self-assessment judges, in a single context, physical and psychosocial components. The perception of the subject in feeling good or does not go beyond physical discomfort, and may include the consequences of some illness and satisfaction with his own life.[1]

This subjective perspective of self-perception of health reveals properties that extrapolate the meaning of health in the literary context, which is seen as a healthy state and absence of disease, because it is judged from a multidimensional perspective of the individual and his different understandings about health, in view of the existing cultural and psychosocial context.[1,4]

Another fundamental aspect is that SAH also exerts the potential to capture individual judgments about the severity of their own health problems, as they include how they experience pain, diseases, bodily sensations, parallel to family support and interferences, reflecting on the trajectory of health status.[5] The poor perception of one's own health can occur even without the identification of any diseases, and it is then revealed that psychosocial circumstances, that is, the relationship between feelings, sensations and social relationship are able to affect the negative perception of the subject about his own health status even in the absence of a medical diagnosis.[1]

Characteristics that influence SAH are diverse factors that fit different domains, including: presence of morbidity, sociodemographic characteristics (income, gender, age and level of education),[3] sensations about well-being, comfort and psychosocial events also influence the interviewee's understanding of his/her health status.[6] However, despite the recognition of SAH as an important predictor for evaluating diagnosis, functionality and morbidity and mortality,[7] there is still a lack of specificity regarding the health problems that would be being evaluated.[8]

One point that should be highlighted is that the individual perception of health often agrees with the evaluation made by the physician. In this perspective, this indicator represents an important factor in predicting health problems that would only be discovered late.[1,9] Data indicate that physical components influence self-assessment more than mental components. For this reason, it is so important the need for health services that contemplate the entire population of the geographic area where they are located, establish differences between morbidities and their pathologies and apply the biopsychosocial model, without leaving the patient at any point.[9]

In addition, SAH is already considered an indicator of recognized morbidity and mortality and widely used in recent studies, especially in large population surveys with regard to health.[4,10] Besides representing a measure of easy application to evaluate association with some clinical conditions, it has been shown to be an important predictor of chronic diseases and mortality.[1,4] At the level of mortality, there is already evidence between the association of poor self-assessment and increased risk of premature death.[10]

AAS has been examined in different social and cultural contexts. In Brazil, some relevant cross-sectional and longitudinal population-based studies that analyzed self-rated health [5]. In order to describe the factors involved in individuals' self-perception regarding health, the National Household Sample Survey (2003) and the World Health Survey (2003) considered that there is an association between self-perception and sociodemographic factors.[11-12]

Considering the need to monitor the frequency and distribution of risk and protective factors for conical diseases, the Ministry of Health has been developing since 2006 in all 26 Brazilian capitals and in the Federal District, a study called Surveillance of Risk and Protective Factors for Chronic Diseases by Telephone Survey (VIGITEL), which includes in the evaluation of the distribution of determinants of chronic non-communicable diseases (NCDs), self-assessment of health status.[13]

The objective question about health condition is a simple tactic applied in population surveys. In addition to the ease and functional clarity to obtain the data, its wide usefulness is recognized for the effectiveness of the information and its effective response even in the face of functional limitations, thus anticipating the possible demand for medical service and mortality later.[8] It is also important to mention that objective question about the health condition allows the reflection of the positive and problematic importance of its state, composing a specification of the subject who manifests signs and symptoms, even notreported by professionals, and the repercussion of these circumstances on their physical, mental and social satisfaction.[13]

In view of the relevance of the theme, the gap observed in the national literature and the availability of the data, the interest arose to obtain an overview of negative self-health assessment among Brazilian adults.

Thus, this study aimed to describe the negative self-assessment of health status among adults in Brazil from 2011 to 2020.

Method

This is a descriptive time-series ecological study conducted with secondary data from the Surveillance of Risk and Protective Factors for Chronic Diseases by Telephone Survey (VIGITEL), managed by the Surveillance System of Risk Factors for NCDs, of the Ministry of Health, available and processed by the Federal Government.

The VIGITEL survey is conducted annually using a probabilistic sampling, composed only of adults aged 18 years or older, who lived in households served by at least one telephone line and residents of one of the 26 Brazilian capitals or the Federal District. The telephone interviews took place between January and December of their respective years, and were conducted by a specialized company.

The present study analyzed data from VIGITEL reports published annually for the period 2011 to 2020, i.e. the last 10 years. Although the VIGITEL survey has been conducted since 2006, only 2011 was considered because from this year on there was a change in the method of evaluating this indicator in relation to the possibilities of answers. Thus, the data from the final sample of this study consisted of the 485,707 interviews conducted in the period by VIGITEL, being composed as follows: in 2011, 54,144, 45,448 in 2012, were

conducted, 52,929 in 2013, 40,853 in 2014, 54,174 in 2015, 53,210 in 2016, 53,034 in 2017, 52,395 in 2018, 52,443 in 2019 and 2020 27,077 interviews.

The self-assessment of health status, the object of the present study, was obtained by VIGITEL using the following question: "Would you classify your health status as: very good, good, regular, bad or very bad?". The answers "bad" or "very bad" were considered negative by VIGITEL divided by the number of interviewees.

The variables considered for the analysis were: region of residence (Northeast, North, Midwest, Southeast and South); capitals, gender (male, female); age (18-24 years, 25-34 years, 35-44 years, 45-54, 55-64, 65 years or more); (0 to 8 years of schooling, 9 to 11 years of schooling, 12 years or more of study).

Data analysis was based on descriptive statistics with the relative frequency (percentage) of people who negatively self-evaluated their health status. Data were collected in July 2022, organized and analyzed in spreadsheets designed for this purpose using microsoft office excel software version 2016.

Because it is a research that used secondary data in the public domain, it does not require authorization from the research ethics committee.

Results

Table 1 shows the percentage of Brazilian adults with negative self-assessment of health status, according to the capitals of the Brazilian states and the Federal District from 2011 to 2020. During the entire period analyzed there was a reduction in rates in some capitals and an increase in others, and in the general media there was a slight reduction.

It is observed that the capitals with the highest average percentage were Rio Branco (4.8%) followed by Maceió (4.7%). There was a reduction in the percentage in 17 capitals (Aracaju, Fortaleza, Maceió, Natal, Recife, São Luís, Teresina, Boa Vista, Manaus, Palmas, Porto Velho, Rio Branco, Campo Grande, Curitiba, Belo Horizonte, São Paulo, Vitória), maintenance in 1 (Macapá) and increase in 9 (João Pessoa, Salvador, Belém, Cuiabá, Distrito Federal, Goiânia, Florianópolis, Porto Alegre, Rio de Janeiro) between the first and last year analyzed (values in Table 1).

In 2011, the first year included in the data analysis, Natal was the capital with the lowest rate (1.7%) while Rio Branco had the highest rate of negative self-assessment of health (7.5%). However, in 2020, the last year analyzed, the cities of Fortaleza, Aracaju, Natal and Teresina had the lowest percentages of adults with negative self-health assessment (figures in Table 1).

Table 1- Percentage of Brazilian adults with negative self-assessment of health status, according to the capitals of the Brazilian states and the Federal District from 2011 to 2020.

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	%
State capitals	%	%	%	%	%	%	%	%	%	%	Mean
Aracaju	2,5	4,4	3,1	3,2	3,1	4,4	3,7	3,1	3,7	1,4	3,3
Fortaleza	4,6	3,5	3,8	2,7	3,3	4,6	1,9	3,5	4,4	1,3	3,4
Joao Pessoa	2,1	1,9	2	4,9	2,5	5,5	4,3	2,7	2,9	2,8	3,2
Maceió	5,5	5	4,9	5,6	4,8	3,2	4,8	4,2	4	5,2	4,7

Natal	1,7	3,8	2,8	2,4	5,6	4,4	3,2	3,7	6,1	1,6	3,5
Recife	5,5	3,3	4,1	4,9	3,9	4,1	3,4	5,4	2,9	2,0	3,9
Salvador	3,2	2,8	2,8	2,8	2,3	2,9	2,7	3,2	5,4	3,7	3,2
São Luís	5,9	3,6	6,4	3,5	3,4	1,8	2,9	4,1	2	5,4	3,9
Teresina	2,4	4,5	5,2	3,8	3,5	3,6	2,7	3,3	2,5	1,7	3,3
Belém	2,6	3,1	3,7	2,1	2,4	2,6	2,1	3,7	3,1	3,4	2,9
Boa Vista	5,2	3,5	5,9	4,6	2,8	3,6	3,3	7,4	3,5	3,4	4,3
Macapá	3,8	4,8	4,4	3,3	2,3	3,0	3,6	3,6	3,6	3,8	3,6
Manaus	4,1	2,8	4,8	6,1	5,0	3,3	2,3	7,5	3,9	3,6	4,3
Palmas	5,0	2,5	3,2	2,7	3,2	2,3	3,4	2,3	2,8	2,7	3,0
Porto Velho	5,5	4,4	4,7	4,6	5,7	5,2	4,3	5,6	3,5	3	4,6
Rio Branco	7,4	5,5	3,1	4,6	5,5	5,3	2,8	1,7	6,3	5,5	4,8
Campo Grande	3,2	2,3	2,1	1,8	2,7	3,0	3,6	2,5	2,1	3,1	2,6
Cuiabá	3,6	2,3	6,4	3,5	4,2	3,6	3,5	2,3	4,3	4,2	3,8
Federal District	2,3	5,1	3,0	3,7	1,8	1,7	2,3	3,1	4,9	5,6	3,3
Goiânia	3,0	1,6	3,1	2,8	6,8	3,6	3	2,2	4,4	3,9	3,4
Curitiba	3,0	3,7	2,4	2,1	2,3	2,8	3,1	3,1	2,8	2,0	2,7
Florianópolis	2,6	2,8	3,2	2,6	3,0	2,6	3,2	2,4	3,2	5,5	3,1
Porto Alegre	2,2	2,2	3	1,6	2,4	3,1	2,8	3,9	4,2	4,3	3,0
Belo Horizonte	3,1	2,2	3,2	3,0	2,3	1,8	3,2	2,7	3,1	2,6	2,7
Rio de Janeiro	2,8	4,0	3,7	3,7	3,4	1,7	2,2	4,2	3,3	3,5	3,2
Sao Paulo	5,9	4,4	4,4	3,5	2,0	1,6	3,3	3,9	2,4	2,5	3,4
Vitória	2,3	2,1	2,2	4,1	2,5	2,1	0,8	4,6	3,0	2,1	2,6
Mean Percentage	3,7	3,4	3,8	3,5	3,4	3,2	3,1	3,7	3,6	3,3	3,5

Source: VIGITEL - Surveillance System for Risk and Protective Factors for Chronic Diseases by Telephone Survey (2011 to 2020).

Table 2 shows that the North region (3.9%) has a higher percentage in the 10 years analyzed. The regions that showed increased rates between 2011 and 2020 were Northeast, North and Southeast, while the regions that showed reduction were Midwest and South (values in the table). It is emphasized that this variation between rates is small.

Table 2- Percentage of Brazilian adults with negative self-assessment of their own health status, according to brazilian regions in the period from 2011 to 2020.

Region	2011 %	2012 %	2013 %	2014 %	2015 %	2016 %	2017 %	2018 %	2019 %	2020 %	% Mean
Northeast	3,7	3,6	3,9	3,8	3,6	3,8	3,3	3,7	3,8	2,8	3,5
North	4,8	3,8	4,3	4,0	3,8	3,6	3,1	4,5	3,8	3,6	3,9
Midwest	3,0	2,8	3,7	3,0	3,9	3,0	3,1	2,5	3,9	4,2	3,5
South	2,6	2,9	2,9	2,1	2,6	2,8	3,0	3,1	3,4	3,9	2,9
Southeast	3,5	3,2	3,4	3,6	2,6	1,8	2,4	3,8	2,9	2,7	3,0

Source: VIGITEL - Surveillance System for Risk and Protective Factors for Chronic Diseases by Telephone Survey (2011 to 2020).

Table 3 shows the percentages of negative self-assessment of health among adults in the brazilian state capitals and the Federal District by gender, age group and schooling from 2011 to 2020. Regarding gender, women had an

average percentage of 4.9% in the period, ranging from 6.0% in 2011 to 4.8% in 2020. The average percentage of males was 3.4%, ranging from 3.5% in 2011 to 3.4% in 2020, and with its highest peak in 2014 with 4.1%.

Regarding the age group, young people between 18 and 24 years old had the lowest mean percentage (3.3%) and adults aged 65 years or older had the highest negative self-assessment (7.5%). The percentage difference between the years 2011 to 2020 in relation to the age group from 18 to 24 years and the elderly (65 years or more) was 4.2%. Regarding education, adults with higher schooling (12 years or more of schooling) had a lower value of 2.1%, while adults with fewer years of schooling (0 to 8 years) had higher negative self-assessment (7.5%).

Table 3- Percentage of negative self-assessment of health among adults in the capitals of the Brazilian states and the Federal District by gender, age group and schooling in the period from 2011 to 2020.

Year Variables	2011 %	2012 %	2013 %	2014 %	2015 %	2016 %	2017 %	2108 %	2019 %	2020 %	Mean Percentage
Gender											
Male	3,52	3,26	3,64	4,1	3,3	3	3,0	3,5	3,6	3,4	3,4
Female	6,0	5,7	5,7	5,5	5,6	5,2	4,8	5,5	5,4	4,8	4,9
Age range											
18-24	3,2	2,6	2,7	3,4	3,2	2,9	3,8	3,4	3,8	4,3	3,3
25-34	4,1	3,6	3,3	3,1	4	2,7	2,7	4,2	4,3	3,4	3,5
35- 44	4,0	4,8	4,4	3,7	4,2	4,4	3,3	3,2	4	4,2	4,0
45 -54	5,3	5,7	6,3	5,5	5,2	4,3	4,5	4,9	4,6	5,2	5,2
55 – 64	7,2	8,5	6,8	6,1	6,6	7	6	6,7	5,9	4,8	6,6
65 and more	9,3	8,0	8,5	6,9	7,3	7,5	6,4	6,9	7,5	6,3	7,5
Education											
0 -8	6,7	8,8	7,9	7	7,7	7,4	6,6	7,2	7,3	7,9	7,5
9 - 11	3,0	3,4	3,8	3,9	3,8	3,8	3,8	4,5	4,7	4,5	3,9
12 and more	1,8	2	2,3	1,6	2,6	2,0	2,1	2,4	2,8	1,7	2,1

Source: VIGITEL - Surveillance System for Risk and Protective Factors for Chronic Diseases by Telephone Survey (2011 to 2020).

Discussion

The present study provides information on negative self-assessment of health status, according to the capitals of the Brazilian states and the Federal District from 2011 to 2020. According to the results, there was a slight reduction in negative self-perception of health status in Brazilian adults in the period analyzed.

Although the frequency for negative self-assessment of health was low (less than 5.0%) in all capitals, these values should be considered, as studies still recognize that self-assessment of health provides relevant and sustained health information of the individual, social and global view of people.[4,10]

A study that used data from the 2013 National Health Survey (NHS) with 60,202 individuals in relation to their perception of their own health,

found that 66.1% of respondents rated their health status as very good or good, 28% as regular, and 5.9% as bad or very bad.[12] It is noteworthy that the concept of health has different meaning for each individual, especially when considering that this is a reflection of individual, psychosocial, economic and mainly cultural aspects.[14]

In this study, the difference in negative self-assessment rates between regions was very small, thus not allowing us to infer that socioeconomic and cultural characteristics among Brazilian regions may have had some influence on this result, even with the evidence that these issues alter this perception.

It is considered that this finding is relatively contradictory, because the inequalities between the Brazilian macroregions are represented by a certain polarity and separation, with the North/Northeast in one block (less developed) and the South/Southeast/Midwest (more developed) in another. Social and economic differences between regions are marked regarding socioeconomic indicators (education, income and wealth) and access to health.[7,15]

It is well known that the regions of the North/Northeast block have much lower average incomes, boasting internal inequalities much higher than the others.[16-17] Due to this reality, it was expected that the North and Northeast regions would present higher percentages of negative self-assessment of health and that these differences compared to the South and Southeast would be higher. Still in relation to this situation, it is worth mentioning, that socioeconomic situation and health conditions are interrelated and that lack of financial resources can be the cause of health problems, including the possibility of not obtaining the health services necessary for diagnosis and health problem, contributing to a poor prognosis.

The literature has been well established the influence of the effects of inequalities related to socioeconomic aspects, such as education, occupation, income, gender, ethnicity, education and health plan ownership in the distribution of the morbidity and mortality of NCDs and their risk factors in the health of populations.[2] It is noteworthy that the way each one thinks about his/her health condition also changes individual aspects such as age, gender, ethnicity, education, income and behavioral aspects, as well as other determinants that interfere in the health-disease process, such as family structure, access to services, sanitation, social support, social discrimination and access to preventive health actions.[3]

In view of the results presented in this study, there was a predominance in the female population a predominance of negative health status assessment, compared to men, similar to what is evidenced in other studies at the local,18 national[16] and international level,[18] national[16] and international.[3] In the case of women, the search more frequently for care services, more predisposition to complain about their physical and/or mental health condition and, therefore, more possibility of diagnosis of chronic diseases, are variables with greater capacity to predict negative self-perception of health.[3,18-19] While in men, one of the explanations is that they have a tendency not to inform their health problems and not seek services for consultations and routine examinations, and thus not perceive their health negatively.[3,18]

Research on factors associated with negative self-perception of health in climacteric women showed that women aged 52 years of age (postmenopausal

period) showed an increase in the prevalence of a worse self-perception of health compared to younger women.[20]

On the other hand, the study on markers of inequality in self-rated adult health in Brazil, according to gender, which analyzed 59,758 individuals aged 18 years or older found that individuals with lower per capita household income, with worse level of education, from the most disadvantaged social classes and residents of the North and Northeast regions were more likely to assess their health worse.[6]

In addition, the present study also showed that older individuals have a higher percentage of negative self-assessment of health compared to younger individuals. Generally this assessment is associated with both well-being indicators and morbidity, functional decline and mortality indicators.[21]

Self-assessment of health has been significantly associated with increasing age. The proportion of very good/good self-assessment decreases as age increases[22], and gender differences are also observed: the perception of one's own health worse among women, regardless of age range.[12]

It is noteworthy that with advancing age and the consequent physiological and social changes in the individual's life, it is expected that there will be greater vulnerability to the emergence of chronic diseases, and the presence of some comorbidities that can substantially alter the health conditions and quality of life of a person.[23] The effects of the process of chronic diseases, mobility difficulties, postural instability, restriction of activities of daily living and disabilities, which are more prevalent in the elderly, may also explain the variability of negative self-perception of health increasing with age.[3,22,24]

Notably, biological dysfunctions can represent generalized predictors for the elderly to conceive the notion of physical health during aging, as well as in the way of dealing with feelings of control, autonomy and functionality in their daily life. Studies indicate that independent elderly in performing activities of daily living presented a higher prevalence of self-assessment of health very good/good.[5]

On the other hand, it is worth mentioning that the higher frequency of adult people who negatively evaluated health among people with lower educational level observed in this study is in line with the existing literature.[3] A study conducted in São Paulo indicates that self-assessment of health is associated with schooling, indicating a better perception of health, especially for the elderly with more years of schooling and with higher income.[8]

Schooling has traditionally been used in studies on health inequality, income, employment and social occupation, important social determinants of health, conditions and lifestyle, are particularly influenced by the subject's level of education.[6] It should also be added that self-assessment of health also represents a subjective indicator of a measure of socioeconomic inequality, as it is influenced not only by an individual's health condition, but also on his standard of living, availability and accessibility of health protection.[3]

A study with data from the 2013 National Health Survey (NHS) significantly showed the effects of the level of education on health perception, because the odds ratio of having a poor/very poor assessment of their own health was 9 times higher among those who had incomplete elementary education, when compared to those who had completed higher education.[12]

Still with regard to schooling, it is known that it is associated with the prevalence of chronic diseases, such as arterial hypertension, the difficulty in dealing with chronic conditions[22] and access to health care, conditions that have the potential to influence health indicators, particularly the perception of general health.[15] However, it is known that the poor perception of one's own health can occur even with the absence of diagnosis of diseases, which reflects on the possibility of experiencing feelings that generate a poor perception of one's own health before the medical identification of the disease.[12]

It is important to highlight that studies involving the health assessment itself are of great relevance for public health, health professionals and nursing, because it represents an indicator that allows the identification of individuals' perceptions of their own condition, based on their beliefs, priorities, experiences and individual circumstances.

In the health care of the population, finding themselves at the forefront of health care and in direct contact with users, families and the community, nurses should understand how the population perceives their health to act in specific actions that attenuate the effects of various factors that interfere in this perception.

The present study presents limitations inherent to the use of secondary data, although this is a valid procedure and used in several studies. Regarding these limitations, the analyzed data are relevant, as they indicate which population layers are most vulnerable to negative self-assessment of health, therefore, the need for actions aimed at the search for alternatives that enable a higher quality and survival of this population, and consequently better self-assessment of health.

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Conclusion

The analysis of negative self-assessment of health status in brazilian state capitals and the Federal District from 2011 to 2020 showed a slight reduction in rates over the period. Rio branco and Maceió were the capitals with the highest frequencies of negative self-rated health, and in contrast it was in Vitória and Campo Grande, where the lowest percentages were found.

According to the results of the study, The Brazilian macroregions presented differences in the relatively small rates of negative self-health. Although the percentage of Brazilian adults who negatively self-rated their health in the period analyzed is relatively low, it was clear that women self-assess their health worse, compared to men and that people with lower age and lower schooling have a higher frequency of this negative health assessment when compared to younger people and with may years of schooling.

It is expected that the data obtained in this study can boost new research focused on serving a larger audience, correlating with other comorbidities and serving as subsidies for improving health care in specific populations.

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