

Positive self-perception of health among non-long-lived and long-lived older adults and associated factors

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Abstract *This work aimed to identify the prevalence of positive self-perceived health among non-long-lived and long-lived older adults and associated factors. This is a study with older adults in the Family Health Strategy of Montes Claros. The Brazilian Older Americans Resources and Services Multidimensional Function Assessment Questionnaire was used. Bivariate and multiple analyses were performed using Poisson Regression. A total of 1,750 older adults participated in the study, of which 1,420 were non-long-lived older adults, and 330 were long-lived older adults. Positive self-perception was reported among 71.9% of the non-long-lived older adults and 67.8% of the long-lived older adults. Among the non-long-lived, positive self-perceived health was associated with five years of schooling (PR=1.12); household income from two to less than three minimum wages (PR=1.13) and \geq three minimum wages (PR=1.12); preserved vision (PR=1.13); proper chewing (PR=1.16); preserved sleep (PR=1.23); absence of polyopathologies (PR=1.29); absence of diabetes (PR=1.15); falls in the last year (PR=1.13); and physical activity (PR=1.11). Among the long-lived older adults, it was associated with the use of prosthesis, sleeping disorders, and polyopathologies and physical activities. Positive self-perception of health is associated with social and health determinants.*

Key words *Self-perception, Aging, Elderly health, Health conditions*

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Introduction

Population aging is a global event resulting from the demographic transition associated with increased longevity, which contributes to changes in epidemiological, economic, and social characteristics¹. It is associated with the declining general mortality levels, lower infant mortality rates, and increased life expectancy at birth^{2,3}.

The age range in older adults' composition distinguishes between the strata of non-long-lived (between 60 and 79 years old) and long-lived (of 80 years old or more) older adults' strata that must be considered due to specific clinical characteristics. As long-lived older adults assume a more significant proportion in the population, the frequency of "hidden conditions" or not classified as fatal diseases increases and adversely affects social and family ties, functional capacity, and well-being⁴. Moreover, multiple morbidities, disabilities, or dependencies establish a worse quality of life^{5,6}. For older adults in general, the cost of maintaining physical and mental capacities and structuring protection mechanisms against problems related to chronic conditions put pressure on the socioeconomic and health sectors⁷.

Qualified assistance for elderly health care has been the subject of different public policies in Brazil⁸⁻¹². In Primary Health Care (PHC), represented by the Family Health Strategy (ESF), attributions were defined for planning, programming, and carrying out actions that involve elderly health care in their area of coverage. A multidisciplinary team's performance to survey and monitor older adults in situations of frailty or functional risk is also provided for, besides promoting specific educational actions^{8,13}.

Based on a performance closer to the subject and adequate use of family health tools, ESF teams can provide individualized care, identifying the association between psychological well-being and physical health timely. In this sense, the concept of self-perceived health allows understanding older adults' perspective about their health and how it relates to the health service.

Because it is linked to socioeconomic, environmental, biological, emotional, cultural, and care factors, it is essential to understand which aspects influence self-perceived health and how. These results would allow providing qualified care focused on real needs and modifying the factors responsible for older adults' illness and vulnerability. Self-perceived health has been recommended to assess people's health conditions

due to the coincidence between perceived and actual health status, besides its widespread and rapid application¹⁴. Older adults' self-perception refers to the correlation between health condition and functionality, and is a good indicator of the quality of life, morbidity, functional decline, and a predictor of mortality¹⁴⁻¹⁷.

The assessment of positive self-perception of health allows the understanding of factors related to the quality of life and health conditions. Thus, the collection of these data can assist in providing health care to older adults and the organization of the work process in line with their peculiarities^{8,9,11,12,16}, and can also contribute to directing intersectoral actions that can positively and longitudinally affect the well-being of this population^{11,12,16}. This study aims to identify the factors associated with positive self-perceived health and its prevalence in non-long-lived and long-lived older adults assisted by the ESF teams in Montes Claros-MG, Brazil.

Method

This study derives from the intervention project entitled *Elderly Health Multidisciplinary Support in Primary Health Care in Montes Claros, Minas Gerais, Brazil*. This is a cross-sectional and analytical research conducted with older adults registered in ESF teams who work as centers of the Family and Community Medicine Residency (RMFC). The Strengthening the Reporting of Observational Studies in Epidemiology (Strobe) checklist for observational studies was employed to assist the research and reporting the results obtained¹⁸.

The municipality is located in the north of Minas Gerais, ranked as the sixth-largest population and the largest in this region of the state¹⁹. IBGE estimates a population of 409,341 inhabitants²⁰. Of the 131 ESF teams in the municipality (97.75% coverage), 38 teams were linked to the RMFC of the Clemente de Faria University Hospital/Unimontes, grouped into 13 educational centers (28.35% coverage).

The sample was calculated for an infinite population and considered the estimated population for the municipality at the time, and 8.17% were older adults. For this elderly population, the frequency of the studied event was considered at 50%, with a 95% confidence interval, an error margin of 3%, and adjustment by the effect of design ($deff=1.5$). The calculated sample was 1,708 individuals. The sample was selected by

two-stage cluster probabilistic sampling, with a draw of the RMFC centers in the municipality's urban area, followed by a draw of teams and micro areas from each center.

All older adults of the selected teams with conditions to answer the questionnaires and a caregiver available during the collection visits were included. Those who were absent from home after three interview attempts, even after previous scheduling on different days and times, were excluded from the study. While the instrument used for data collection allows the caregiver to provide much information, for self-perceived health assessment, older adults who were unfit for such judgment according to the family's assessment were also excluded.

Data collection employed the Brazilian Older Americans Resources and Services Multidimensional Function Assessment Questionnaire (Bomfaq)²¹. The investigated variables were grouped into blocks: socioeconomic and physical and mental health²¹. For analysis purposes, the variables were categorized as described in Charts 1 and 2.

The data were collected by health professionals and previously trained students at the older adults' homes at agreed times, from September 2016 to May 2017. For data analysis, older adults were stratified into two groups: non-elderly long-lived (aged 60 to 79) and long-lived (aged 80 or more) older adults. Descriptive analysis was performed by simple and relative frequency. Self-perceived health was used as a dependent variable, categorized as positive (excellent/good) or negative (poor/very bad) self-perception. Sociodemographic characteristics (gender, skin color, schooling, marital status, remunerated work, income, and people living in the household), physical and mental health (visual impairment, hearing impairment, dental prosthesis, difficulty chewing, difficulty swallowing, sleep disorders, insomnia, polypharmacy, cognitive impairment, polypathology, hypertension, diabetes, obesity, depression, falling, and physical activity).

Initially, a bivariate analysis was performed for each group, and the variables with a p-value up to 0.20 were selected for the multiple analysis. The magnitude of the association between the independent variable and the independent variables was measured by the crude and adjusted prevalence ratios (PR), which were estimated by the Poisson regression model with robust variance. The significance level was set at 0.05. The deviance test was used to assess the quality of the models. All statistical analyses were performed

using the statistical software IBM SPSS® (Statistical Package for the Social Science), version 20.0 for Windows.

The study was conducted under Resolution N° 466, of December 12, 2012, of the National Health Council, Ministry of Health²². The Research Ethics Committee of the State University of Montes Claros (CEP/Unimontes). Participants were informed about the purposes, methods and procedures, benefits, risks, discomforts, and precautions of the study, and agreed by signing an Informed Consent Form.

Results

A total of 1,750 older adults participated in this study, 1,420 (81.1%) were non-long-lived older adults and 330 (18.9%) long-lived older adults. Females were predominant in both non-long-lived and long-lived older adults' strata, 63.7% and 62.4%, respectively. Self-declared non-whites predominate in both strata (65.5% and 55.7%). Low education and illiteracy reached 67.8% of the older adults in the sample, with 64.6% of the non-long-lived elderly and 82.5% of the long-lived. Ninety percent of the individuals live with someone, and 41.8% of the non-long-lived and 63.5% of the long-lived older adults have no partner. Income distribution follows the same pattern in both strata: 20% with a subsidy below one minimum wage, and about 57% receiving between one and less than three minimum wages. Positive self-perception was reported in 71.2% of the older adults, with 71.9% among non-long-lived and 67.8% among long-lived.

Table 1 shows the bivariate analysis visualized and variables associated with positive perception in non-long-lived older adults. The variables selected for multiple analysis were gender ($p=0.001$); up to 4 years schooling ($p=0.072$) and 5 years or more ($p<0.001$); income of 2 to less than 3 minimum wages ($p=0.013$) and greater than 3 minimum wages ($p<0.001$); visual difficulty ($p<0.001$); hearing difficulty ($p=0.008$); dental prosthesis ($p=0.146$); difficulty chewing ($p<0.001$); difficulty swallowing ($p=0.012$); sleep disorders ($p<0.001$); insomnia ($p<0.001$); polypharmacy ($p<0.001$); polypathology ($p<0.001$); arterial hypertension ($p<0.001$); diabetes mellitus ($p<0.001$); obesity ($p=0.008$), falls ($p<0.001$); and physical activities ($p<0.001$).

The bivariate analysis for positive self-perception in long-lived older adults is shown in Table 2. The variables selected for multiple analysis were

Chart 1. Categorization of socioeconomic variables of the non-long-lived and long-lived older adults. Montes Claros-MG, Brazil.

Variable	Original category	Classification for the study
Age	Years	Non-long-lived (60-79 years)
		Long-lived (80 years and over)
Gender	Male	Male
	Female	Female
Skin color	White	White
	Black	Non-white
	Brown	
	Yellow	
	Indigenous	
Schooling	Illiterate	Illiterate
	Can read/write or incomplete elementary school.	Up to 4 years
	Complete elementary school	
	Secondary school	5 years and over
	College/higher education	
Marital status	Married	With partner
	Common-law marriage	Without partner
	Single	
	Divorced/separated	
	Widower	
Performs paid activity	Yes, working.	Yes
	No, retired for length of service	No
	No, retired due to health problems	
	No, retired due to age	
	No, pensioner (spouse's pension or lifetime pension)	
	No, receives nothing (housewife, dependent)	
	No, another situation	
Household income	Amount in reais (R\$)	Less than one minimum wage ^a
		Between one and two minimum wages
		Between two and three minimum wages
		Three or more minimum wages
Living with whom	Alone/no one else lives permanently together.	Alone
	Only with professional caregiver (1 or +)	With someone
	Only with spouse	
	With others of same generation (with or without spouse)	
	With children (with or without spouse)	
	With grandchildren (with or without spouse)	
	Other arrangements	

^aClassified with the baseline of one minimum wage equivalent to R\$ 937.00.

Source: Elaborated by the authors.

5 years or more schooling ($p=0.040$); income of 2 to less than 3 minimum wages ($p=0.158$); hearing difficulty ($p=0.165$); dental prosthesis ($p=0.019$); difficulty chewing ($p=0.005$); sleep disorders ($p<0.001$); insomnia ($p<0.001$); polypharmacy ($p=0.059$); cognitive impairment

Chart 2. Classification of physical and mental health variables of non-long-lived and long-lived older adults. Montes Claros-MG, Brazil.

Variable	Original category	Classification for the study
Self-perceived health	Excellent/Good	Positive
	Poor/very poor	Negative
Visual impairment	Yes, with improvement Yes, without improvement Blind	Yes
	No, but would require No, there is no need	No
Hearing impairment	Yes, with improvement Yes, without improvement	Yes
	No, but would require No, there is no need	No
Use of dentures	Yes, upper or lower Yes, would require remaking	Yes
	No, but would require upper or lower No, there is no need	No
Chewing difficulty	Very frequent Always	Frequently/ Always
	Rarely	Rarely
	Never	Never
Difficulty swallowing	Very frequent Always	Frequently/ Always
	Rarely	Rarely
	Never	Never
Sleep disorders	Yes, sleeps easy, but wakes up a lot at night Yes, difficulty falling asleep, but does not wake up much at night Yes, difficulty falling asleep and wakes up a lot at night	Yes
	No, sleeps easy and but does not wake up much at night	No
Polypharmacy	Number of mentioned medications	Yes
		No
Cognitive impairment	Mini-Mental score for schooling suggests cognitive impairment ^a	Yes
	Mini-Mental score for schooling suggests no cognitive impairment ^b	No
Polypathology	Number of pathologies mentioned in the questionnaire	Yes
		No

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($p=0.045$); polypathologies ($p<0.001$); diabetes ($p=0.180$); depression ($p=0.143$); falls in the last year ($p=0.040$); and physical activities ($p=0.011$).

Table 3 shows the adjusted analysis results for positive self-perceived health in older adults regarding the selected independent variables. Regarding non-long-lived older adults, an association was found with 5 years or more schooling ($PR=1.26$); household income of 2 to less than 3 minimum wages ($PR=1.13$) and greater than or equal to 3 minimum wages ($PR=1.12$); preserved

vision ($PR=1.13$); proper chewing ($PR=1.16$); preserved sleep ($PR=1.23$); absence of polypathologies ($PR=1.29$); not having diabetes ($PR=1.15$); no falls in the last year ($PR=1.13$); and physical activities ($PR=1.11$). Concerning long-lived older adults, the results of the adjusted analysis showed an association of positive self-perceived health with the variables use of prosthesis ($PR=1$); lack of sleep disorders ($PR=1.37$); not having polypathologies ($PR=1.22$), and physical activities ($PR=1.24$).

Chart 2. Classification of physical and mental health variables of non-long-lived and long-lived older adults. Montes Claros-MG, Brazil

Variable	Original category	Classification for the study
Insomnia	Yes, interferes with life	Yes
	Yes, does not interfere with life	
	No	No
Arterial Hypertension	Yes, interferes with life	Yes
	Yes, does not interfere with life	
	No	No
Diabetes mellitus	Yes, interferes with life	Yes
	Yes, does not interfere with life	
	No	No
Obesity	Yes, interferes with life	Yes
	Yes, does not interfere with life	
	No	No
Depression	Yes, interferes with life	Yes
	Yes, does not interfere with life	
	No	No
Falls in the last year	Yes, but did not affect gait	Yes
	Yes, and affected gait	
	No	No
Physical activity	Yes	Yes
	No	No

^aScore ≤ 13 for illiterates and ≤ 24 for more than 8 years of schooling²¹; ^bScore ≥ 13 for illiterates and ≥ 24 for more than 8 years of schooling²¹.

Source: Elaborated by the authors.

Discussion

This study identified positive self-perceived health in more than two-thirds of the non-long-lived and long-lived older adults assessed. The prevalence values for this outcome vary in the literature. A study based on the 2013 National Health Survey (PNS) with 23,815 older adults showed a 44% prevalence of positive self-perception²³. Another study conducted in Florianópolis-SC in 2018 with a sample of 239 long-lived older adults observed a 41.8% prevalence of positive self-perception among older adults⁷. In an investigation also conducted in the municipality of Montes Claros, among community older adults evidenced a 42.4% prevalence of positive self-perception of health²⁴. Such differences can be attributed to the social, economic, cultural, demographic, and health factors of each region and also to different criteria for measuring self-perceived health.

Knowledge about the real needs of older adults is essential for planning actions appro-

priate to their situation, but strategies are still lacking²⁵. The perception of health is a good indicator of the population's health status. This study can show the profile of the non-long-lived, and long-lived older adults with a positive perception of health, essential for the surveillance of their general health¹⁶. The investigation of health perception also represents a determinant of the use of services. Therefore, this measure evaluated by health professionals and managers can potentially provide an alert to improve health care for the older adults assisted in PHC and promote the quality of life and increase longevity²⁴.

Primary care is the preferred area for a subject-centered approach and provides the appropriate use of family health tools to promote individualized care. It represents the possibility for health professionals to act using epidemiological, political, and social characteristics to diagnose local health problems and act on the social determinants of the illness process²⁶. Self-perceived health can influence the demand for health care and, in some situations, adherence to health

Table 1. Bivariate analysis of positive self-perceived health among non-long-lived older adults with independent variables - Prevalence and Prevalence Ratio and 95%CI.

Independent variables	Self-perceived health			p-value	PR	(95%CI)
	Negative n (%)	Positive n (%)	Total n (%)			
Gender						
Female	283(31.1)	620(68.9)	903(100)		1	-
Male	123(22.8)	394(77.2)	517(100)	0.001	1.12	(1.05-1.19)
Skin color						
Non-white	278(29.1)	656(70.9)	934(100)		1	-
White	128(26.0)	357(74.0)	485(100)	0.211	1.04	(0.98-1.12)
Schooling						
Illiterate	53(40.6)	74(59.4)	127(100)		1	-
Up to 4 years	256(31.7)	540(68.3)	796(100)	0.072	1.15	(0.99-1.34)
5 years and over	97(19.4)	399(80.6)	496(100)	0.000	1.36	(1.17-1.58)
Household income						
<1 MW	105(36.5)	180(63.5)	285(100)		1	-
=1 to <2 MW	139(30.1)	314(69.9)	453(100)	0.080	1.10	(0.99-1.23)
=2 to <3 MW	99(27.0)	257(73.0)	356(100)	0.013	1.15	(1.03-1.28)
≥3 MW	63(19.2)	263(80.8)	326(100)	0.000	1.27	(1.15-1.41)
Visual impairment						
Yes	385(29.4)	904(70.6)	1289(100)		1	-
No	20(14.6)	109(85.4)	129(100)	<0.001	1.21	(1.12-1.31)
Hearing impairment						
Yes	81(36.4)	136(63.6)	217(100)		1	-
No	324(26.5)	878(73.5)	1202(100)	0.008	1.15	(1.04-1.28)
Dentures						
Yes	339(28.7)	824(71.3)	1163(100)		1	-
No	63(24.4)	187(75.6)	250(100)	0.146	1.06	(0.98-1.15)
Chewing difficulty						
Frequently/Always	66(42.2)	87(57.8)	153(100)		1	-
Rarely	52(44.9)	62(55.1)	114(100)	0.665	0.95	(0.77-1.18)
Never	287(24.4)	864(75.6)	1151(100)	<0.001	1.31	(1.14-1.50)
Difficulty swallowing						
Frequently/Always	21(51.1)	19(48.9)	40(100)		1	-
Rarely	37(49.9)	35(50.1)	72(100)	0.903	1.03	(0.69-1.52)
Never	347(26.2)	958(73.8)	1305(100)	0.012	1.51	(1.10-2.08)
Sleep disorders						
Yes	238(39.6)	354(60.4)	592(100)		1	-
No	168(19.8)	660(80.2)	828(100)	<0.001	1.33	(1.23-1.43)

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treatment, especially in chronic patients, who should change their lifestyle. Thus, determining how this population self-perceives its health situation can also be useful for health planning and contributes to the success of interventions by health professionals within PHC, considering its reality²⁷.

Changes in short-term health conditions can generate changes in functional capacity and af-

fect older adults' autonomy and independence and, therefore, reflect on their perception of well-being^{14,16}. The assessment of the perceived health status can be a good predictor of quality of life, functional capacity, morbidity, and mortality among older adults^{23,28}. The prevalence of positive self-perceived health declines with aging, due to the increased number and severity of pathologies^{7,14,16,24,28}.

Table 1. Bivariate analysis of positive self-perceived health among non-long-lived older adults with independent variables - Prevalence and Prevalence Ratio and 95%CI.

Independent variables	Self-perceived health			p-value	PR	(95%CI)
	Negative	Positive	Total			
	n (%)	n (%)	n (%)			
Insomnia						
Yes	190(45.5)	229(54.5)	419(100)		1	-
No	216(20.9)	784(79.1)	1000(100)	<0.001	1.45	(1.32-1.59)
Polypharmacy						
Yes	175(40.6)	250(59.4)	425(100)		1	-
No	231(22.8)	763(77.2)	994(100)	<0.001	1.30	(1.19-1.42)
Cognitive impairment						
Yes	34(30.8)	75(69.2)	109(100)		1	-
No	372(27.9)	937(72.1)	1309(100)	0.537	1.04	(0.92-1.19)
Polypathology						
Yes	252(45.7)	292(54.3)	544(100)		1	-
No	154(17.2)	722(82.8)	876(100)	<0.001	1.52	(1.40-1.66)
Arterial hypertension						
Yes	318(31.6)	677(68.4)	995(100)		1	-
No	88(19.9)	337(80.1)	425(100)	<0.001	1.17	(1.10-1.25)
Diabetes						
Yes	125(40.4)	183(59.6)	308(100)		1	-
No	279(24.6)	829(75.4)	1108(100)	<0.001	1.27	(1.14-1.40)
Obesity						
Yes	102(34.9)	186(65.1)	288(100)		1	-
No	303(26.3)	825(73.7)	1128(100)	0.008	1.13	(1.03-1.24)
Depression						
Yes	28(32.1)	58(67.9)	86(100)		1	-
No	378(27.8)	956(72.2)	1334(100)	0.420	1.06	(0.92-1.24)
Falls in the last year						
Yes	159(38.5)	247(61.5)	406(100)		1	-
No	247(23.8)	767(76.2)	1014(100)	<0.001	1.24	(1.14-1.35)
Physical activity						
Yes	301(32.7)	601(67.3)	902(100)		1	-
No	105(20.0)	411(80.0)	516(100)	<0.001	1.19	(1.12-1.27)

PR: Crude prevalence ratio. CI: Confidence interval.

Source: Elaborated by the authors.

In this study, perception varied among older adults, with a lower frequency of positive evaluation among long-lived older adults. A national household survey in the five Brazilian geographic regions with 12,324 individuals evidenced a negative perception of health associated with increased age, with 62% of negative evaluations among older adults linked to a worse health status²⁸. These differences show that the elderly PHC users underlie a group with specific characteristics requiring individualized care in this regard.

The analysis of factors associated with positive self-perceived health in older adults revealed that the absence of polypathologies and phys-

ical activity was statistically significant. Both non-long-lived and long-lived older adults who do not have polypathologies had a higher positive perception of health. Healthy individuals or those with fewer chronic conditions have a better self-assessment of their health status²⁸. A lower number of pathologies are possibly linked to lower restriction of activities of daily living, preserved functionality, and better perception of health^{14,16,23,29}.

Regularly physically active, non-long-lived, and long-lived older adults had a higher prevalence of positive self-perceived health than older adults in the same stratum who were not. Pos-

Table 2. Bivariate analysis of positive self-perceived health among long-lived older adults with independent variables - Prevalence and Prevalence Ratio and 95%CI.

Independent variables	Self-perceived health			p-value	PR	(95%CI)
	Negative n (%)	Positive n (%)	Total n (%)			
Gender						
Female	69(33.6)	137(66.4)	206(100)		1	-
Male	36(29.9)	88(70.1)	124(100)	0.487	1.06	(0.91-1.23)
Skin color						
Non-white	60(32.9)	125(67.1)	185(100)		1	-
White	45(31.3)	100(68.7)	145(100)	0.770	1.02	(0.88-1.19)
Schooling						
Illiterate	29(39.7)	45(60.3)	74(100)		1	-
Up to 4 years	63(32.2)	135(67.8)	198(100)	0.280	1.12	(0.91-1.39)
5 years and over	13(22.8)	45(77.2)	58(100)	0.040	1.28	(1.01-1.62)
Household income						
<1 MW	25(37.9)	41(62.1)	66(100)		1	-
=1 to <2 MW	37(35.3)	69(64.7)	106(100)	0.732	1.04	(0.82-1.32)
=2 to <3 MW	22(26.7)	63(73.7)	85(100)	0.158	1.18	(0.94-1.49)
≥3 MW	21(29.2)	52(70.8)	73(100)	0.290	1.14	(0.90-1.45)
Visual impairment						
Yes	92(32.7)	194(67.3)	286(100)		1	-
No	11(25.9)	31(74.1)	42(100)	0.339	1.10	(0.90-1.34)
Hearing impairment						
Yes	41(37.1)	69(62.9)	110(100)		1	-
No	62(29.2)	156(70.8)	218(100)	0.165	1.13	(0.95-1.33)
Dentures						
Yes	75(28.3)	193(71.7)	268(100)		1	-
No	27(47.2)	32(52.8)	59(100)	0.019	0.74	(0.57-0.95)
Chewing difficulty						
Frequently/Always	26(51.3)	25(48.7)	51(100)		1	-
Rarely	16(43.7)	21(56.3)	37(100)	0.479	1.16	(0.77-1.73)
Never	62(26.1)	179(73.9)	241(100)	0.005	1.52	(1.13-2.04)
Difficulty swallowing						
Frequently/Always	11(42.5)	15(57.5)	26(100)		1	-
Rarely	16(52.6)	14(47.4)	30(100)	0.450	0.82	(0.50-1.36)
Never	77(28.7)	196(71.3)	273(100)	0.218	1.24	(0.88-1.74)

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itive self-perception is higher in regularly physically-active individuals linked to maintaining and improving functionality, decreasing morbidities, and improving social activities, and the consequent improved general well-being^{16,24,29}. A national epidemiological survey showed that physical activity doubled the likelihood of positive self-assessment²⁸.

Non-long-lived older adults also showed an association between positive self-perceived health and 5 years or more schooling, household income of 2 or more minimum wages, preserved vision, preserved chewing, absence of insomnia,

not being diabetic, and not having falls in the last year. The highest educational level is related to better access to information, and the adoption of better lifestyle habits: physical activity, balanced diet, adequate weight, moderate consumption of alcohol and non-smoking^{16,24,29,30}.

A national household survey study associated worse perception of health with the presence of lower income and chronic disease²³. Higher household income may be related to better access to health services, treatments, more effective drugs, and better adherence¹⁴. Visual difficulty and other sensory changes limit the performance

Table 2. Bivariate analysis of positive self-perceived health among long-lived older adults with independent variables - Prevalence and Prevalence Ratio and 95%CI.

Independent variables	Self-perceived health			p-value	PR	(95%CI)
	Negative	Positive	Total			
	n (%)	n (%)	n (%)			
Sleep disorders						
Yes	65(46.0)	76(54.0)	141(100)		1	-
No	40(21.9)	149(78.1)	189(100)	<0.001	1.45	(1.22-1.72)
Insomnia						
Yes	48(48.2)	52(51.8)	100(100)		1	-
No	57(25.4)	172(74.6)	229(100)	<0.001	1.44	(1.17-1.77)
Polypharmacy						
Yes	54(38.0)	87(62.0)	141(100)		1	-
No	51(27.9)	138(72.1)	189(100)	0.059	1.16	(0.99-1.36)
Cognitive impairment						
Yes	38(41.5)	54(58.5)	92(100)		1	-
No	67(28.8)	169(71.2)	236(100)	0.045	1.22	(1.00-1.47)
Polypathology						
Yes	64(43.4)	84(56.6)	148(100)		1	-
No	41(23.0)	141(77.0)	182(100)	<0.001	1.36	(1.16-1.60)
Arterial hypertension						
Yes	80(33.2)	163(66.8)	243(100)		1	-
No	24(28.7)	61(71.3)	85(100)	0.433	1.07	(0.91-1.26)
Diabetes						
Yes	22(41.1)	32(58.9)	54(100)		1	-
No	83(30.7)	191(69.3)	274(100)	0.180	1.18	(0.93-1.49)
Obesity						
Yes	13(32.4)	29(67.6)	42(100)		1	-
No	92(32.4)	194(67.6)	286(100)	0.997	1.0	(0.80-1.26)
Depression						
Yes	17(44.4)	21(55.6)	38(100)		1	-
No	88(30.6)	204(69.4)	291(100)	0.143	1.25	(0.93-1.68)
Falls in the last year						
Yes	50(39.2)	78(60.8)	128(100)		1	-
No	55(27.8)	147(72.2)	202(100)	0.040	1.19	(1.01-1.40)
Physical activity						
Yes	91(34.8)	172(65.2)	263(100)		1	-
No	13(20.4)	53(79.6)	66(100)	0.011	1.22	(1.05-1.42)

PR: Crude prevalence ratio, CI: Confidence Interval.

Source: Elaborated by the authors.

of activities, changing functionality, and deteriorating the quality of life³¹⁻³³. In the municipality of Sete Lagoas (MG), in the evaluation of 2,052 older adults showed impaired quality of life in individuals who reported functional limitations²⁹.

Non-long-lived older adults who never had difficulty chewing have a higher prevalence of positive self-perceived health. Oral problems and edentulism are common in this population and can promote masticatory difficulty, change food

choice and compromise nutrition, socialization, maintenance of functionality, and quality of life, worsening with age³⁴. A multicenter study with a sample of 3,478 older adults showed a higher prevalence of absence of natural teeth and difficulty or pain in chewing hard food in long-lived older adults compared to non-long-lived older adults²⁴. A study with 326 older adults carried out in the urban area of Passo Fundo-RS revealed that the lack of dental problems was associated

Table 3. Adjusted prevalence ratio (PR) for positive self-perceived health of older adults.

Variables	Non-long-lived older adults			Long-lived older adults		
	PR	95%CI	p-value	PR	95%CI	p-value
Schooling						
Illiterate	1	-	-	-	-	-
Up to 4 years	1.14	0.99-1.31	0.077	-	-	-
5 years and over	1.26	1.09-1.46	0.002	-	-	-
Household income						
<1 MW	1	-	-	-	-	-
=1 to <2 MW	1.07	0.97-1.17	0.194	-	-	-
=2 to <3 MW	1.13	1.02-1.24	0.018	-	-	-
≥3 MW	1.12	1.02-1.23	0.021	-	-	-
Visual impairment						
Yes	1	-	-	-	-	-
No	1.13	1.05-1.22	0.001	-	-	-
Denture						
Yes	-	-	-	1	-	-
No	-	-	-	0.76	0.60-0.96	0.023
Chewing difficulty						
Frequently/Always	1	-	-	-	-	-
Rarely	0.97	0.79-1.19	0.735	-	-	-
Never	1.16	1.01-1.33	0.035	-	-	-
Sleep disorders						
Yes	-	-	-	1	-	-
No	-	-	-	1.37	1.16-1.63	0.000
Insomnia						
Yes	1	-	-	-	-	-
No	1.23	1.12-1.35	0.000	-	-	-
Polypathology						
Yes	1	-	-	1	-	-
No	1.29	1.18-1.40	0.000	1.22	1.04-1.43	0.016
Diabetes						
Yes	1	-	-	-	-	-
No	1.15	1.05-1.27	0.003	-	-	-
Falls in the last year						
Yes	1	-	-	-	-	-
No	1.13	1.05-1.22	0.002	-	-	-
Physical activity						
Yes	1	-	-	1	-	-
No	1.11	1.04-1.17	0.001	1.20	1.04-1.38	0.012
<i>Deviance</i>		1801.026		465.34		
<i>p-value</i>		1.292		1.445		

PR: Adjusted prevalence ratio, 95%CI: Confidence Interval.

Source: Elaborated by the authors.

with better satisfaction with life³⁵ and, consequently, better self-perceived health.

The absence of insomnia is associated with fewer mood changes³¹⁻³³, culminating in a better quality of life. A study with 1,418 older adults using a self-administered questionnaire correlated low sleep duration with poor health status³³.

The absence of diabetes, associated with a higher positive perception in this study, may result from the negative view that falls on chronic diseases, especially their irreversibility, and the difficulty in adhering to the lifestyle changes required, continuous use of medications, and fear of chronic complications²⁸. The health frame-

work, such as the absence of disease, can also be an influencing factor¹⁴. The association between positive self-perception and the non-occurrence of falls in the last year can be explained by the risk of falls promoting fractures, restricted mobility, gait instability, psychological trauma, social limitation, and impaired autonomy and independence, which adversely affects the quality of life and reduces the positive perception^{16,24}.

An association with the use of dental prosthesis and sleep disorders was observed in the long-lived older adults. Tooth loss is related to discomfort and reduced masticatory efficiency, leading to less consistent and carbohydrate-rich foods, with possible adverse repercussions on general health^{34,35}. The use of dental prostheses favors the expansion of the food spectrum and provides better nutrition and functional preservation³⁴.

In older adults evaluated by the Study of Healthy Aging Processes (PENSA) Project, the positive perception in 62% of the sample showed a statistical association with good sleep quality³. The volume of pathologies and the number of medications influence the worst quality of sleep. Aging determines changes in the duration of sleep stages, with shortening of deep sleep and increased superficial stages, which can lead to more nighttime awakenings, early awakening, and less effective sleep³³.

Adaptations to the aging process, with the recognition of diseases and limitations due to the normal development of this process, possibly do not harm health assessment²⁸. Therefore, ESF's actions must be directed towards the maintenance and recovery of functionality and prevention of processes that may culminate in disability and dependence¹³. The PHC professional should consider self-perceived health in the care of older adults as part of the assessment, signaling possible organic and contextual changes to equate the care provided³⁶.

Self-perceived health is a good indicator that reflects morbimortality in older adults^{14,23,28}. Understanding which variables can interfere in the

positive self-perception of the health of non-long-lived and long-lived older adults can allow building the interventions aimed at quality of life, in contrast to health problems' remedies^{7,16}.

In this study, the robust sample and the use of a validated collection instrument increased the reliability of information and analysis. Nevertheless, the possible interference from the survival factor of individuals with better health conditions should be recognized, which may overestimate the prevalence of positive self-perceived health. One limitation is the use of self-reported information and the lack of uniformity in the responses of studies in the literature, which hinders the comparison of the results^{14,24}.

Final considerations

This study showed a high prevalence of positive self-perceived health among older adults, which can be explained by differences related to social determinants and health behaviors, with specificities between the strata of non-long-lived and long-lived older adults.

The guidelines contained in the National Elderly Health Policy orient the relevance of programmed disease prevention and health promotion actions. Considered a good indicator of the health and well-being of this population, the analysis of self-perceived health and its associated factors can assist in more effective interventions in maintaining and preserving their quality of life.

Given healthy aging, this study can help pool the knowledge of organic and non-organic factors with the most significant impact on its functionality. Positive self-perception of health can lead to points of broad and integrated multidisciplinary intervention focused on the quality of life added to the years lived. Further longitudinal studies with this population and that consider the heterogeneous age groups and cultural, social, and economic scenarios are suggested.

Collaborations

CHG Brasil participated in the study design, planning, interpretation of statistical analyzes and results, article writing, critical review of the article. LC Maia and AP Caldeira participated in the design and planning, data interpretation, critical review of the article and approval of the final version. MFSF Brito and L Pinho participated in the study design, planning, interpretation of statistical analyzes and results, critical review of the article and approval of the final version.

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