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Factors associated with negative self-rated health in menopausal women

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Abstract *The scope of this study was to investigate the prevalence and factors associated with negative self-rated health in menopausal women registered with the Family Health Strategy in a Brazilian urban center. It is a cross-sectional study with a random sample of menopausal women. A validated instrument addressing socio-demographic and behavioral data related to self-rated health status was used. The association between the variables studied and negative self-rated health was assessed by bivariate analysis followed by Poisson regression with robust variance, in a hierarchical model. The prevalence of negative self-rated health among the population studied was 41.6%, among 761 women. Among women aged 52-65 years old, 49.2% had negative self-rated health. Age corresponding to post-menopause, education up to eight years of study, having a partner, not having a formal job, current tobacco use and physical inactivity were associated with negative self-rated health. The presence of menopausal symptoms, overweight and obesity, the current use of medication and the presence of chronic diseases were also associated with negative self-rated health in the final model. The associations observed point to the need for health promotion activities aimed at menopausal women.*

Key words *Self-assessment, Health status, Menopause, Family Health Strategy*

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Introduction

The climacteric is a transitional period between the women reproductive and nonreproductive phase. It is an endocrine phenomenon characterized by progressive hypoestrogenism, due to ovarian follicles depletion in middle-aged women[1]. Menopausal, a climacteric period landmark, is defined as the last menstruation, retrospectively identified after 12 months of amenorrhea[2]. The mean age that menopause occurs remains virtually unaltered over the years, in other words, around 50 years old[3]. Considering women life expectancy in most of the world, it is natural to conclude that women spend one-third of their lives with hormonal deficiency.

Women undergo simultaneous physical, hormonal and psychosocial changes. Physically, there is a declining tendency in the healthy state due to the appearance of chronic diseases associated with aging[3]. The hormonal changes in the climacteric are related to ovarian follicle function decline with hormonal fluctuations and consequent vasomotor instability. Symptoms such as heat waves, vaginal dryness and sleep disturbances are observed as consequence of these changes[4]. Under the psychosocial aspect, the climacteric corresponds to a series of life changes[5]. Added to this set of alterations observed in this period, the family composition may suffer changes due to death or divorce, children that leave or return home and parents that become more dependent, further aggravating the context of organic changes.

Assessing climacteric women's health and understanding how they perceive their health conditions are fundamental measures for the adoption of health preventive and promotion strategies, avoiding morbidities and allowing better women quality of life. Although there are several studies about climacteric associated conditions, few studies are devoted to the evaluation of self-rated health during this period[6].

Self-rated health is an increasingly used indicator in epidemiological studies due to its validity and reliability, strongly associating the real health state and health goal by incorporating physical, cognitive and emotional aspects[7,8]. It is an easily obtained variable that offers valuable information regarding the studied population as it is influenced not only by the presence of diseases but by well-being, life satisfaction, functional capacity and quality of life[9-13].

Studies demonstrate that individual's health perception is a strong predictor of morbidity and mortality, even with controlled physical, psychosocial and sociodemographic factors[6,14]. Some authors have shown that self-rated health is a measure associated with health services use[9]. For these reasons, self-rated health is considered a useful indicator and a practical tool in population health surveys.

The present study aimed to investigate the negative self-rated health prevalence and associated factors in climacteric women registered in the Family Health Strategy (FHS) in the North of Minas Gerais.

Methods

A cross-sectional study with women aged from 40 to 65 years old enrolled in Health Family Health Strategy (FHS) in an urban area in the North of Minas Gerais was performed. The region is a transition area between the southeast (more developed) and Northeast (less developed) and it is characterized by its socioeconomic contrasts, being considered an emblematic area of the country's challenges.

The sampling was performed by the probabilistic method. The participants were selected by lottery, following a sampling plan in two stages. Initially, conglomerates were selected, represented by Basic Health Units (BHU) where the FHS teams work, by simple random sampling. From the 73 BHU in the municipality, 20 were drawn to participate. Following that, the study participants were selected by simple random sampling, stratified according to the climacteric period (pre-menopausal women aged from 40 to 45 years, perimenopausal aged from 46 to 51 years old and postmenopausal aged from 52 to 65 years old)[15]. The sample calculation was performed based on the following parameters: the number of women enrolled in each one of the HFS teams and a 50% expected frequency of negative self-rated health, considering the inexistence of previous data on this indicator and the fact that this prevalence generates a greater sampling number. 5% sampling error and 95% confidence level were accepted. The final value was multiplied by a correction factor for the design effect (*deff*) equal to 2, thus obtaining a minimum number of 760 women to be evaluated.

Following interviewers training and before the data collection period, a pilot study was performed with women that belong to the studied age group and was not part of the final sample. The pilot study allowed the questionnaire and the interviewer's performance to be tested. Af-

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ter this phase, the field survey was started. Data collection instrument adjustments were not required.

The questionnaire questions for data collection were obtained from validated instruments[16-18] including sociodemographic, behavioral and health status aspects. The dependent variable was represented by the self-rated health and was obtained by the question: *In comparison to the people in your age, how do you consider your health status?*. The four response categories were dichotomized in positive (for "very good" and "good" options) and negative (for "regular" and "bad" options).

The independent variables were subdivided into sociodemographic, behavioral and health-related. The sociodemographic variables were: age, skin color, schooling, marital status and formal employment. The behavioral variables were represented by physical activity, smoking habit, and alcohol abuse. Physical activity was verified by the International Questionnaire of Physical Activity - IPAQ, short version[16]. Women who followed the vigorous activity recommendations (≥ 3 days a week and ≥ 20 minutes per session; or moderate activity ≥ 5 days a week and ≥ 30 minutes per session; or any summed activity: ≥ 5 days a week and ≥ 150 minutes a week) were considered active. Sedentary women were those who did not perform any physical activity for at least 10 continuous minutes during the week. Women who performed physical activity, but insufficiently to be classified as active (as they did not comply the frequency or duration recommendations) were classified as irregularly active. Alcohol abuse was considered to consume 4 or more drinks of alcoholic beverage (1 drink = 1 can of beer, 1 glass of wine or 1 dose of distilled beverage) on a single occasion, in the last 30 days[17]. Regarding the health state, were evaluated: current use of medication, presence of self-reported morbidities (arterial hypertension, heart problems, elevated cholesterol, diabetes, spinal problems/back pain or depression), menstruation in the last 12 months, climacteric symptoms according to the Kupperman index[18] and Body Mass Index (BMI) calculation using anthropometric measurements (body mass (Kg) and height (m)) in a Filizola Scale with 100g precision coupled to a stadiometer).

For data analyzes, the *Statistical Package for the Social Sciences* SPSS software (version 21) was used. Initially, descriptive and exploratory analyzes were performed, where frequencies distributions of the studied variables were displayed. Following, bivariate analyzes were applied, aimed to find associations between the independent variables and negative self-rated health by the chi-squared test. Variables associated up to the 20% level ($p \leq 0.20$) were selected for multivariate analyzes.

In the analytical adjusted phase, Poisson regression with robust variance was used, based on a hierarchical model in which the sociodemographic variables block was considered distal determinant (first level). The variables related to life habits composed the following block (second level) and the variables related to the health state, such as self-reported morbidities, medications use, climacteric symptoms and BMI composed the third and last level, more proximal to the dependent variable. Prevalence ratios (PR) and its respective confidence intervals (CI 95%) were obtained, being adopted to the final model and significance level of 5% ($p<0,05$). All calculations were performed considering the *complex sample analysis*.

The participants voluntarily agree to participate in the study and signed the informed consent, where the study aims, evaluation procedures, and volunteer character were described. The study project was previously evaluated and approved by the Ethics Committee from the Faculdades Integradas Pitágoras in Montes Claros.

Results

761 women aged from 40 to 65 years old were interviewed. Among those, 43.9% were in the postmenopausal age group (52 to 65 years old), and 56.1% in the pre and perimenopausal groups (40 to 51 years old). More than half women referred to skin color as brown (65.6%), were married (64.4%) and have studied up to 8 years (67.2%). Regarding life habits, most of them did not smoke (89.4%) and were irregularly active (56.8%). Table 1 presents a detailed description of the sociodemographic and behavioral sample characteristics.

The health state characteristics are described in Table 2. It is observed that 58.4% of the evaluated women reported a very good or good self-rated health and 41.6% reported regular or bad self-rated health. More than half used some type of medication (63.8%) and presented body weight excess (74.2%). Spinal problems/back pain (53.2%), arterial hypertension (47.9%) and elevated cholesterol (41%) were among the main reported health problems.

Tables 3 and 4 present the bivariate findings between self-rated health and independent variables. Remained in the hierarchical model the variables: age, schooling, marital status, formal unemployment, smoking habit, sedentarism, medications use and self-reported hypertension, spinal problems (back pain), depression, overweight/obesity according to BMI, besides climacteric symptoms (Table 5), after the multiple analysis.

Table 1. Sociodemographic and behavioral characteristics of climacteric women, 2014.

Variables	(n)	%	%*
Age			
40 to 45 years old (premenopausal)	224	28.4	29.4
46 to 51 years old (perimenopause)	203	27.3	26.7
52 to 65 years old (postmenopausal)	334	44.3	43.9
Skin color			
White	129	18.0	17.0
Brown	499	64.8	65.6
Black	90	12.0	11.8
Other	43	5.2	5.6
Marital status			
Single	71	9.3	9.3
Married	490	65.3	64.4
Divorced	123	15.4	16.2
Widowed	77	10.0	10.1
Schooling			
Up to 4 years of study	308	39.6	40.5
5 to 8 years of study	203	26.8	26.7
More than 8 years of study	250	33.6	32.8
Formal employment			
No	446	59.0	58.6
Yes	315	41.0	41.4
Smoking habit			
No	81	10.0	10.6
Yes	680	90.0	89.4
Alcohol abuse			
Yes	56	7.4	7.8
No	705	92.6	92.2
Physical activity			
Sedentarism	231	30.7	30.3
Irregularly active	432	56.1	56.8
Active/very active	98	13.1	12.9

(*) Adjusted prevalence, according to the complex sample analysis.

Discussion

The present study reported an increased prevalence of negative self-rated health (regular or bad health) among climacteric women. A populational study that evaluated the presence of multimorbidity's in Brazilian women in the same age group also reported comparable results for negative self-rated health[19]. Although with different response categories for self-rated health, a study performed in Florianópolis, Brazil[9], with elderly from both genders also showed increased negative self-rated health prevalence. These results analyses approximate the self-rated health of climacteric women and the elderly population.

Regarding age, it was observed that among women in the postmenopausal group (age group above 52 years old) an increased prevalence in

Table 2. Health state and self-rated health in climacteric women, 2014.

Variables	(n)	%	%*
Menstruated in the last 12 months			
No	406	53.4	53.4
Yes	355	46.6	46.6
Medications use			
Yes	486	63.5	63.8
No	275	36.5	36.2
Self-reported morbidities **			
Hypertension	365	48.1	47.9
Increased cholesterol	312	40.7	41.0
Heart problems	100	13.9	13.2
Diabetes	117	15.0	15.4
Spinal problems (back pain)	405	52.0	53.2
Depression	174	22.9	22.8
BMI			
Adequate	198	26.1	26.0
Overweight	289	38.4	38.0
Obesity	274	35.5	36.0
Climacteric symptoms			
Present	292	39.0	38.4
Absent	469	61.0	61.6
Self-rated health			
Very good	110	14.1	14.4
Good	335	43.2	44.0
Regular	241	32.7	31.7
Bad	75	10.0	9.9

(*) Adjusted prevalence, according to the complex sample analysis. (**) The sum is higher than 100% as some women reported more than one comorbidity.

Table 3. Association between sociodemographic, behavioral and self-rated health in climacteric women, 2014 (bivariate analysis).

Variables	Self-rated health					
	Negative		Positive		p-value	PR (CI 95%)*
	(n)	%	(n)	%		
Age					< 0.001	
52 to 65 years	166	49.2	171	50.8		1.37(1.33-1.41)
40 to 51 years	151	35.7	273	64.3		1.00
Schooling					< 0.001	
Up to 8 years	244	48.3	261	51.7		1.73(1.67-180)
9 years or more	71	27.8	185	72.2		1.00
Skin color					0.070	
Other	261	41.8	363	58.2		1.03(0.99-1.07)
White	55	40.4	82	59.6		1.00
Marital status					0.010	
With a partner	210	42.2	287	57.8		1.04(1.01-1.07)
Without a partner	107	40.6	157	59.4		1.00
Formal employment					<0.001	
No	208	46.3	241	53.7		1.32(1.28-1.36)
Yes	109	35.0	203	65.0		1.00
Smoking habit					<0.001	
Yes	42	55.9	34	44.1		1.40(1.34-1.45)
No	273	39.9	412	60.1		1.00
Alcohol abuse					0.210	
Yes	24	42.9	32	57.1		1.03(0.98-1.09)
No	342	48.5	363	51.5		1.00
Physical activity					<0.001	
Sedentary	115	49.3	119	50.7		1.28(1.25-1.32)
Actives	202	38.3	325	61.7		1.00

(*) PR: Prevalence ratio; CI 95%: 95% Confidence Interval.

worse self-rated health responses was observed as compared to younger climacteric women. A worse health state perception associated with aging was already demonstrated in other studies, although most of the studies were performed in the general population[20-23]. It is known that, as an individual age, the performance of daily life activities decreases, which can be caused, preceded, or occur independently of the morbidities appearance, impacting on the individual's health perception[21].

The association between self-rated health and schooling have been demonstrated in several studies[24-27]. In the present study, it was observed that schooling up to 8 years was associated with negative self-rated health. It is possible that low-grade schooling compromises the women social participation in activities that may favor its health status, with information access, general care and social opportunities over life[28]. According to the Vigitel data, a National survey performed in all Brazilian capitals and Federal district, an expressive decrease in the negative self-rated health frequency with increased schooling was observed[29].

Concerning familiar arrangement, women that reported to have a partner negatively evaluated their health as compared to women without a partner. This study presents data similar to other study performed with elderly, in which those who lived alone evaluated their health more positively than those with company[28]. This association may be attributed to the fact that people who lived alone presented better physical conditions, not depending on the care of others.

The negative health state perception has been associated to the absence of a formal employment, which was already verified earlier[21]. This association is still ambiguous in the literature. Data from the World Health Research in Brazil, for example, showed that among men the unem-

Table 4. Association between health status characteristics and self-rated health in climacteric women, 2014 (bivariate analysis).

Variables	Self-rated health				p-value	PR (CI 95%)*
	Negative		Positive			
	(n)	%	(n)	%		
Menstruated in the last 12 months					< 0.001	
No	193	47.6	213	52.4		1.36(1.32-1.41)
Yes	124	34.8	231	65.2		1.00
Medications use					< 0.001	
Yes	238	49.2	245	50.8		1.73(1.67-1.80)
No	79	28.3	199	71.7		1.00
Hypertension					< 0.001	
Yes	199	54.5	167	45.5		1.83(1.77-1.88)
No	117	29.7	278	70.3		1.00
Increased cholesterol					< 0.001	
Yes	167	54.0	143	46.0		1.64(1.59-1.68)
No	148	32.9	303	67.1		1.00
Heart problems					< 0.001	
Yes	68	64.6	38	35.4		1.69(1.64-1.74)
No	250	38.1	405	61.9		1.00
Diabetes					< 0.001	
Yes	72	63.0	42	37.0		1.67(1.62-1.72)
No	244	37.7	403	62.3		1.00
Spinal problems (back pain)					< 0.001	
Yes	214	54.0	182	46.0		1.96(1.90-2.03)
No	100	27.5	265	72.5		1.00
Depression					< 0.001	
Yes	100	57.4	74	42.6		1.55(1.51-1.60)
No	217	36.9	370	63.1		1.00
IBMI					< 0.001	
Overweight/obesity	253	45.0	309	55.0		1.41(1.35-1.46)
Adequate	63	31.9	136	68.1		1.00
Climacteric symptoms					< 0.001	
Present	177	59.5	120	40.5		1.95(1.89-2.00)
Absent	142	30.5	322	69.5		1.00

(*) PR: Prevalence ratio; CI 95%: 95% Confidence Interval.

ployment is associated with a negative self-rated health perception, although the same association was not observed among women[25]. The progressive insertion of women in the job Market and, simultaneously, suffering from not being able to work or the unemployment condition might associate, hypothetically, to the negative self-rated health perception.

As with regards life habits, it was verified in the present study that sedentarism and smoking habit have been associated to a negative self-rated health. It has already been demonstrated that regular physical practice improves quality of life, through the maintenance of people independence and autonomy and, consequently, biopsychosocial well-being[9]. Smoking is a known risk factor for several diseases and has been pointed as a variable associated with negative self-rated health perception[24].

The results from this study indicate that the presence of chronic diseases among climacteric women associates with a negative health perception. The presence of chronic diseases implies a greater probability to a negative self-rated health[19,20,24,26]. This negative association is expected, especially, among the elderly, and may be the

Table 5. Association between sociodemographic, behavioral, health-related and negative self-rated health in climacteric women, 2014 (multiple analysis).

Variables	p-value	PR*	CI 95%**
Distal component			
Age > 52 anos	< 0.001	1.43	1.36-1.52
Schooling < 8 years of study	< 0.001	2.14	2.02-2.27
With partner	< 0.001	1.15	1.09-1.22
Formal unemployment	< 0.001	1.25	1.19-1.33
Intermediate componente			
Smoking habit	< 0.001	1.77	1.64-1.93
Sedentarism	< 0.001	1.36	1.29-1.44
Proximal component			
Use of medications	0.008	1.11	1.03-1.20
Hypertension	< 0.001	1.55	1.44-1.66
Increased cholesterol	< 0.001	1.39	1.31-1.48
Heart problems	< 0.001	1.83	1.68-1.99
Diabetes	< 0.001	1.68	1.55-1.83
Spinal problems (back pain)	< 0.001	2.38	2.24-2.52
Depression	< 0.001	1.40	1.30-1.50
Overweight/Obesity	< 0.001	1.41	1.31-1.51
Climacteric symptoms	< 0.001	2.41	2.28-2.56

(*) PR: Prevalence ratio. (**) CI95%: 95% Confidence interval.

result of a perception that having health means diseases absence. Another factor that may also explain the negative health self-perception related to the presence of comorbidities is the fact that they can raise limitations on daily activities and to self-care. In a study performed in Belo Horizonte, Brazil, with climacteric women that studied 11 years or more, it was evidenced an association between regular/bad self-rated health perception and depression[30]. This data may indicate that the self-rated health perception for this specific population behaves similarly to other populations in which the indicator has already been studied.

Besides the presence of chronic diseases, it was verified that the use of medicines has been associated with a worse health status perception. It is expected that regular consumption of drugs will, in fact, imply a fragility of health conditions[9,10]. Overweight/obesity have been associated with a worse health perception, which was demonstrated in a previous study performed with Brazilian women aged over 50 years old[31]. Although obesity is known to be related to the presence of chronic diseases such as cardiovascular diseases, the association between BMI and negative health self-perception persists even after adjustment for the presence of these morbidities.

The association between climacteric symptoms and negative self-rated health was verified in this study. This finding highlights the need for the highest appreciation of these symptoms in the approach to women aged from 40 to 65 years old. It was already demonstrated that a greater intensity of climacteric symptoms is associated to a negative self-rated health perception, it is possible that this association is caused by the negative effect that the symptoms bring to the women psychological state[32].

The present study presents some limitations that might be considered in the interpretation and results generalization process. The studied population comprehended only women registered in the health public system. This public is, for the most part, of lower socioeconomic class and, therefore, the results may not be extrapolated to the general population. The cross-sectional design does not allow cause-effect inferences to be made regarding negative health self-perception and the studied variables. Another possible limitation is that the use of self-reported variables may imply incorrect information, although field team training and pilot study have been performed to minimize possible collection errors.

On the other hand, the present study is relevant as it provides valuable information on the

health of an almost always neglected part of the Brazilian population, climacteric women. The analyzes of a climacteric women representative sample from a large center allowed the identification of factors associated with negative self-rated health. The results presented contribute to other research involving promotion and health self-perception aspects, aiming to improve the women quality of life, especially those in the climacteric phase.

Collaborations

VH Silva, JSB Rocha and AP Caldeira also participated in all stages of the article's elaboration.

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