Sexual dysfunction in the climacteric period and associated factors

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Abstract

Objectives: to evaluate associated factors with sexual dysfunction among middle-aged women.

Methods: cross-sectional and analytical study was carried out with climacteric women attended at a Family Health Strategy Unit in the city of Montes Claros, MG. Brazil. The eligible women answered a question form containing sociodemographic, behavioral, anthropometric, gynecological factors and sexuality. The Body Mass Index and waist circumference were used to assess nutritional status and metabolic risk. To evaluate quality of life and sexual performance the Menopause Rating Scale and the Sexual Quotient - Female Version were used, respectively. Bivariate analysis and hierarchical multiple regression were used to identify associated factors with sexual dysfunction in the climacteric period.

Results: among 195 women, 29.6% had sexual dysfunction. The prevalence of unsatisfactory sexual performance was higher among women who reported moderate to severe climacteric symptoms (OR=2.47) and lower schooling level was also associated (OR=1.95). However, age at menarche below 12 years (OR=0.43) and non-white (OR=0.36) seem to have a protective effect for good sexual performance.

Conclusion: the prevalence of sexual dysfunction was high and the level of schooling and climacteric symptomatology were associated factors with this outcome.

Key words *Climacteric, Physiological sexual dysfunction, Psychogenetic sexual dysfunctions, Woman's health, Sexuality*

Introduction

The climacteric phase in the female population occurs between the ages of 40 and 65 and is a phase of life that characterizes the transition between the reproductive and non-reproductive periods with a consequent reduction in steroid hormones.[1,2] This reduction associated with other factors such as emotional and socio-cultural factors, makes women more susceptible to sexual dysfunction,[3-5] influencing their quality of life.[6]

Female sexual dysfunction has a multifactorial origin, involving any disorder that includes variation in the intensity and quality of desire, arousal and orgasm,[7] and may be associated with endocrine changes in the middle age.[8]

In Brazil, the prevalence of sexual dysfunction reaches an average of 60% of the women between the ages of 40 and 65.[9,10] The dimensions most affected have been sexual desire, vaginal lubrication and sexual satisfaction, and the main reason for their dissatisfaction is related to bodily changes, which favors low self-esteem and decreased sexual desire, the latter being the most observed.[11]

Sexual function is part of a healthy aging with quality of life.[12] Therefore, it is considered an important aspect of women's well-being, regardless of age.[13,14] In view of this, it is essential to know the factors that can interfere with sexual life during the climacteric period.[15] There is no consensus in the literature on factors that influence the sexuality in middle-aged women.[8]

The aim of this study was to assess the factors associated with sexual dysfunction among middle-aged women.

Methods

This is a cross-sectional, analytical study carried out with climacteric women who took part in a health education event on breast cancer between August and October 2013 at a Family Health Strategy Unit (ESF) in the city of Montes Claros, MG. Brazil.

The aforementioned sample was selected due to its greater accessibility, as there was no specific space and/or location in the city to care for climacteric women. This study included women aged between 40 and 60 years old, considered to be middle-aged by the World Health Organization (WHO),[1] apparently healthy, with good physical conditions for measuring anthropometric data and without sexual abstinence in the last six months. Exclusion criteria were pregnant women, women unable to answer the questionnaire, women with psychiatric disorders and any factor that made the interview impossible (e.g. lack of time, pathologies, illiteracy and explicit refusal).

The authors trained all the interviewers beforehand and supervised all the data collected. Eligible women who were waiting to be attended were individually invited to take part in the study.

These women answered the form developed specifically for this research, in which the independent variables were allocated into four blocks: (1) sociodemographic, (2) behavioral, (3) anthropometric and (4) gynecological.

The sociodemographic variables included age, self-reported skin color, occupation, home ownership and schooling.

The behavioral variable block took into account smoking (non-smokers and smokers/ex-smokers), alcohol consumption (consumers and non-consumers) and whether the women were satisfied with their bodies (yes or no).

The anthropometric variables were Body Mass Index (BMI) and Waist Circumference (WC). To calculate BMI, height and weight were measured.[16] To assess body weight, the women were weighed wearing light clothing and no shoes, in an orthostatic position, with their feet together and arms relaxed along their body, on a Geratherm® Body Fat Scale (Brazil) portable electronic scale, with a capacity for 150 Kg, minimum and precision of 50 g. Height was measured using a Carci® (Brazil) inelastic tape measure, with a scale of 0 to 150 cm, on a flat wall without a baseboard. During the measurement, the women were instructed to stand up straight, keep their feet together and look to the horizon, without bending or extending their heads. Weight and height measurements were taken in duplicate and the average obtained to calculate BMI. Overweight was considered when BMI $\geq$ 25kg/m^2, according to the cut-off point recommended by the *Associação Brasileira para o Estudo da Obesidade e da Síndrome Metabólica* (ABESO)[17] (Brazilian Association for the Study of Obesity and Metabolic Syndrome).

Waist circumference (WC) was obtained using an inelastic anthropometric tape scaled by 0.1cm. The measurement was taken with the individual standing with the abdomen relaxed, arms outstretched and on the side of the body. The tape measure was placed on the smallest circumference of the abdomen or on the curvature located between the ribs and the hip bone (iliac crest), without compressing the tissues. Three measurements were taken, followed by an arithmetic mean. Those with WC $\geq$80 cm and very high WC $\geq$88 cm were considered to be at metabolic risk.[18]

The gynecological variables included: 1) climacteric symptoms (asymptomatic-mild and moderate-severe). This assessment used the Menopause Rating Scale (MRS), an instrument validated for Brazilian Portuguese language, consisting of 11 questions that addressed the symptoms segmented into somato-vegetative, psychological and urogenital domains. Each woman analyzed and gave her

opinion on each symptom and could classify it as absent, mild, moderate, severe or very severe.[19] 2) climacteric phases: pre-menopause (if menstrual cycles were naturally maintained), post-menopause (if there was spontaneous amenorrhea for a period of 12 consecutive months or more) and did not have menopause yet, if there was menstruation in the last 12 months, even if irregular. 3) type of menopause (spontaneous, hysterectomized and did not have it yet). 4) age at menopause (<50 or ≥50 years). 5) age at menarche (≥12 or <12 years).

The second instrument was the Sexual Quotient, female version (SQ-F) used to assess sexual function. This instrument assesses the various domains of women's sexual activity and was developed and validated specifically for the Brazilian female population. It consists of 10 questions that assess each phase of the sexual response cycle: questions 1, 2 and 8 on sexual desire and interest; question 3, foreplay; questions 4 and 5, personal arousal and attuned with the partner; questions 6 and 7, comfort; questions 9 and 10, orgasm and satisfaction.[20]

Each question must be answered on a scale of zero to five, with zero indicating "never" and five "always". The score is obtained by adding the points from all the questions multiplied by two, resulting in a score ranging from zero to 100. Overall sexual performance/satisfaction is calculated by multiplying the sum of the values of the 10 questions by two, and is interpreted as follows: 82-100 points, good to excellent; 62-80 points, fair to good; 42-60 points, unfavorable to fair; 22-40 points, poor to unfavorable and 0-20 points, null to poor. The higher the scores for questions on the QS-F (with the exception of question 7, which refers to the presence of pain), the best indication of the woman's sexual performance/satisfaction.[20]

A score of less than or equal to 60 is established as the cut-off point for diagnosing the presence of female sexual dysfunction.[20]

Initially, descriptive analyses were carried out on all the variables investigated by means of their frequency distributions. Bivariate analyses were then carried out between the outcome variable (sexual function) and each independent variable (sociodemographic, behavioral, anthropometric and gynecological) using the logistic regression model, estimating the odds ratio (OR) and its 95% confidence interval. Variables with a descriptive level (p-value) of less than 0.25 were selected for multiple analysis. The logistic regression model was used in the multiple analysis. The Odds Ratio (OR) with a 95% confidence interval (CI95%) was used to analyze the strength of the association. The statistical program PASWR 17.0 was used to carry out the analyses.

The research project for this study was approved by the Research Ethics Committee of the *Universidade*

Estadual de Montes Claros (UNIMONTES) under opinion number 311.572 (CAAE: 17846513.0.0000.5146).

Results

The sample consisted of 253 women with a mean age of 50.2 years (SD ± 5.8 years). Of these women, 195 reported being sexually active and 58 had not had sexual intercourse in the last six months, resulting in a total of 195 women eligible to answer the QSF.

The sample was dichotomized into two subgroups in terms of the standard of sexual function, based on the QS-F scores, with 47.4% having a good standard sexual function and 29.6% having sexual dysfunction. The other characteristics of the group are shown in Table 1.

Table 2 shows the results of the bivariate analyses. All the variables were found to be associated at the 0.25% level with the sexual performance outcome: age (p=0.009) skin color (p=0.014), occupation (p=0.179), home ownership (p=0.189), schooling (p=0.017), smoking (p=0.183), alcohol consumption (p =0.074), satisfied with body (p=0, 119), BMI (p=0.25), WC (p=0.228), climacteric symptoms (p=0.019), climacteric stages (p=0.019), type of menopause (p=0.002), age of menopause (p=0.027), age of menarche (p=0.094). These variables were selected for the final multiple analysis.

The variable "climacteric symptoms" was a factor associated with "sexual performance". The prevalence of unsatisfactory sexual performance was higher among women who reported moderate to severe symptoms (OR=2.47), when compared to those who presented mild symptoms or no symptoms at all (Table 3).

It was found that women who had a low level of schooling (elementary school / no schooling) had a higher prevalence of sexual dissatisfaction when compared to those who reported having high school and higher education (OR=1.95) (Table 3).

On the other hand, the variable on age of menarche below 12 years and non-white seemed to have a protective effect on good sexual performance, respectively (OR=0.43; CI95%=0.18-1.02), (OR=0.36; CI95%=0.17-0.76) (Table 3).

Discussion

This study showed that just over a quarter of the women had sexual dysfunction, which was more evident in those who self-reported moderate to severe climacteric symptoms. The outcome in sexual performance was associated with age, severity of climacteric manifestations, low level of schooling and skin color.

In this study, sexual dysfunction had a frequency of 29.6%, a value lower than those found in studies carried

Table 1

Distribution of climacteric women according to characteristics on sociodemographic, behavioral, anthropometric, gynecological and sexual performance. Montes Claros,MG, 2013.

Variables	n	%
Sociodemographic		
Age (years)		
40 - 45	65	25.7
46 - 50	64	25.3
51 - 55	65	25.7
56 - 60	59	23.3
Skin color		
White	52	20.6
Non-white	200	79.1
Occupation		
Paid work	139	54.9
Unpaid work	113	44.7
Home ownership		
Yes	201	79.4
No	52	20.6
Schooling		
High school/ Higher Education	109	43.1
Elementary school- No schooling	144	56.9
Behavioral		
Smoking		
No	177	70.0
Yes- former smoker	76	30.0
Alcohol consumption		
No	173	68.4
Yes	80	31.6
Satisfied with body		
Yes	105	41.5
No	148	58.5
Anthropometric		
Body Mass Index		
< 25	86	34.0
≥ 25	167	66.0
Waist circumference		
No risk	84	33.2
Metabolic risk	35	13.8
Increased metabolic risk	134	53.0
Gynecological		
Climacteric symptoms		
Asymptomatic-Mild	67	26.5
Moderate-Severe	185	73.1
Climacteric stages		
Premenopause	117	46.2
Post menopause	134	53.0
Type of menopause		
Did not have menopause yet	118	46.6
Spontaneous	103	40.7
Hysterectomized	29	11.5
Age of Menopause		
Did not have menopause yet	117	46.2
< 50 years	99	39.1
≥ 50 years	35	13.8
Age of Menarche		
≥ 12 years	208	82.2
< 12 years	44	17.4
Sexual performance		
Sexual performance		
Satisfactory performance	120	47.4
Unsatisfactory performance	75	29.6

Table 2

Association among sexual performance of climacteric women and sociodemographic, behavioral, anthropometric and gynecological variables: crude odds ratio (OR) and 95% confidence interval. Montes Claros-MG, 2013.

Variables	Unsatisfactory performance	Satisfactory performance	OR (CI95%)	p
	%	%	Crude	
Sociodemographics				
Age (years)				0.009
40 - 45	23.3	76.7	1.00	
46 - 50	37.0	63.0	1.93 (0.86 – 4.36)	
51 - 55	54.3	45.7	3.91 (1.70 – 9.00)	
56 - 60	45.7	54.3	2.77 (1.13 – 6.77)	
Skin color				0.014
White	54.8	45.2	1.00	
Non-white	34.0	66.0	0.43 (0.21 – 0.85)	
Occupation				0.179
Paid work	34.3	65.7		
Unpaid work	43.7	56.3	1.49 (0.83 – 2.67)	
Home ownership				0.189
Yes	40.5	59.5	1.00	
No	28.1	71.9	0.58 (0.25 – 1.32)	
Schooling				0.017
High School-Higher Education	29.1	70.9	1.00	
Elementary-No schooling	45.9	54.1	2.07 (1.14 – 3.76)	
Behavioral				
Smoking				0.183
No	41.3	58.7	1.00	
Yes- former smoker	30.8	69.2	0.63 (0.32 – 1.5)	
Alcohol consumption				0.074
No	43.0	57.0	1.00	
Yes	29.9	70.1	0.57 (0.30 – 1.07)	
Satisfied with body				0.119
Yes	45.3	54.7	1.00	
No	34.2	65.8	0.63 (0.35 – 1.13)	
Anthropometric				
Body Mass Index				0.250
< 25	43.8	56.2	1.00	
≥ 25	35.9	64.1	0.72 (0.39 – 1.32)	
Waist circumference				0.228
No risk	42.4	57.6	1.00	
Metabolic risk	50.0	50.0	1.36 (0.53 – 3.47)	
Increased metabolic risk	33.3	66.7	0.68 (0.36 – 1.28)	
Gynecological factors				
Climacteric symptoms				0.019
Asymptomatic-Mild	25.5	74.5	1.00	
Moderate-Severe	43.6	56.4	2.26 (1.13 – 4.52)	
Climacteric stages				0.019
Premenopause	30.8	69.2	1.00	
Post menopause	47.2	52.8	2.01 (1.12 – 3.62)	
Type of menopause				0.002
Did not have menopause yet	30.5	69.5	1.00	
Spontaneous	56.2	43.8	2.93 (1.54 – 5.59)	
Hysterectomized	26.1	73.9	0.81 (0.29 – 2.23)	
Age of Menopause				0.027
Did not have menopause yet	30.8	69.2	1.00	
< 50 years	43.3	56.7	1.72 (0.91 – 3.25)	
≥ 50 years	59.1	40.9	3.25 (1.26 – 8.37)	
Age of Menarche				0.094
≥ 12 years	40.9	59.1	1.00	
< 12 years	25.7	74.3	0.51 (0.22 – 1.14)	

OR= Crude odds ratio; CI95%= 95% confidence interval.

Table 3

Crude and adjusted odds ratios for sexual performance in climacteric women associated with socio-demographic, behavioral, anthropometric and gynecological factors. Montes Claros-MG 2013.

Variables	OR (CI95%) Crude	p	OR (CI95%) Ajusted	p
Climacteric symptoms		0.019		0.015
Asymptomatic-Mild	1.00		1.00	
Moderate-Severe	2.26 (1.13 – 4.52)		2.47 (1.19 – 5.12)	
Age of Menarche		0.094		0.056
≥ 12 years	1.00		1.00	
< 12 years	0.51 (0.22 – 1.14)		0.43 (0.18 – 1.02)	
Schooling		0.017		0.036
High School – Higher Education	1.00		1.00	
Elementary – no Schooling	2.07 (1.14 – 3.76)		1.95 (1.04 – 3.65)	
Skin color		0.014		0.007
White	1.00		1.00	
Non-white	0.43 (0.21 – 0.85)		0.36 (0.17 – 0.76)	

OR= odd ratio; CI95% = 95% confidence interval.

out in Brazil and in other countries. In Brazil, in the states of Pernambuco and Sergipe, studies revealed that 44.4% and 42.9% of the women were at risk of sexual dysfunction, respectively.[21,22] In a study carried out in an outpatient clinic at a public hospital in the Northeast of Brazil, women aged between 40 and 65, more than half of them had sexual dysfunction (58.7%).[23] In other studies which evaluated middle-aged Iranian women, the risk of sexual dysfunction reached 46% and 68%, respectively.[24,25] Other studies of middle-aged women have also found a high frequency of sexual dysfunction.[10,26,27] These variations can be attributed to factors such as the type of questionnaire used, sample size, study design and sociodemographic characteristics.

In this present study, age had an influence on sexual performance, especially in the 51 to 55 age group, with a higher percentage of unsatisfactory performance. Findings in a study of 162 post-menopausal Iranian women showed that age, combined with anxiety, interfered with sexual function.[24] At this stage of life, there are various factors that interfere with sexual function and sexuality, such as the hormonal and physiological changes that are characteristics at this stage.[8,28]

The MRS domains were higher in the group of women at risk of sexual dysfunction, when compared to those who were not, thus suggesting a greater intensity of symptoms in the group at risk of sexual dysfunction, as shown by Cabral *et al.*[9]

The reduction in estrogen levels in the female body interferes with sexual response, as this hormone plays a crucial role in sexual desire, thus increases the risk of sexual dysfunction.[10,26,29] Several studies have also corroborated these results, showing that the arrival of menopause can have a negative impact on sexual function, especially when associated with the common symptoms of this stage at a woman's life.[9,10]

In this research, an investigation was carried out with women living in the state of Bahia and associated low schooling with sexual dysfunction which this factor was also associated as a high risk of sexual dysfunction.[30] Individuals with greater social vulnerability (which is often related to a lower level of schooling) and, consequently, financial vulnerability, can have repercussions on their sexuality.[30]

As for skin color, women who called themselves white had a higher risk of sexual dysfunction than others. A study of climacteric women living in Teresina, in the state of Piauí, Brazil, revealed that most of the women were not white and that 64% of the sample was at risk of sexual dysfunction.[10]

Among the population studied, the prevalence of sexual dysfunction was high and an analysis of possible factors were associated with its occurrence revealing the influence of schooling, as well as climacteric symptoms. It is noteworthy that in Brazil, there are not many studies evaluating the pattern of sexual function in climacteric women and its association with other factors.[21,30]

This study was carried out with a non-probabilistic sample, which represents a limitation to the external validity of the results. However, it is important for the population in question, these women need to improve their quality of life, since the presence of sexual activity in the ageing process preserves good relationships with their partners, reducing feelings of loneliness.

Further studies should be planned and carried out in order to find out about the various factors that may be associated with sexual dysfunction in climacteric women, enabling a better multidisciplinary approach in order to provide a better quality of life.

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Authors' contribution

Gonçalves JTT and Silveira MF conceived the study, carried out the experimental design, analyzed the data and interpreted the results. Gonçalves JTT and Gonçalves CT carried out the data collection. Gonçalves JTT and Vieira KH drafted the manuscript and critically reviewed it for important intellectual content. Reis VMCP statistically analyzed the data and interpreted the results. Santana RF critically revised it for intellectual content. All the authors approved the final version of the article and declared no conflicts of interest.

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