● **Original article**

PSYCHOLOGICAL SYMPTOMS IN CLIMACTERIC WOMEN WITH HEART DISEASE

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ABSTRACT: Objective: to investigate psychological climacteric symptoms in women with heart disease. **Method:** a quantitative study, carried out at a University Hospital in the Northeast of Brazil, from October 2016 to January 2017. A total of 221 climacteric women with heart disease were interviewed at the Cardiology Outpatient Clinic. Descriptive statistical analysis was performed, association with the non-parametric Chi-square test of independence ($\chi 2$) and Spearman's correlation test, with the use of the SPSS Statistics 20 program. **Results**: there was a predominance of very intense climacteric symptoms such as anguish/anxiety, 75 (33.9%); physical and mental exhaustion, 61 (27.6%); depressed mood, 54 (24.4%); nervousness, 59 (26.7%); and insomnia, 45 (20.4%). There were significant associations among the psychological climacteric symptoms and between the psychological symptoms and depression. **Conclusion:** psychological climacteric symptoms appear to make women more prone to emotional disorders, aggravated by the existence of a chronic disease such as cardiopathy.

KEYWORDS: Climacteric; Menopause; Cardiopathies; Psychology; Psychic symptoms.

SINTOMAS PSICOLÓGICOS EM MULHERES CLIMATÉRICAS CARDIOPATAS

RESUMO: Objetivo: investigar os sintomas climatéricos psicológicos em mulheres cardiopatas. **Método:** estudo quantitativo, realizado em Hospital Universitário no Nordeste do Brasil, no período de outubro de 2016 a janeiro de 2017. Foram entrevistadas individualmente 221 mulheres climatéricas cardiopatas atendidas no Ambulatório de Cardiologia. Foram realizadas análises da estatística descritiva, de associação com o teste não paramétrico de Qui-quadrado de independência (χ^2) e teste de Correlação de *Spearman*, com o auxílio do programa *SPSS Statistics 20*. **Resultados:** houve predomínio de sintomas climatéricos muito intensos como a angústia/ansiedade, 75 (33,9%); esgotamento físico e mental, 61 (27,6%); estado de ânimo depressivo, 54 (24,4%); nervosismo, 59 (26,7%); e insônia, 45 (20,4%). Houve associação significativa nos sintomas climatéricos psicológicos entre si e entre os sintomas psicológicos e a depressão. **Conclusão:** os sintomas climatéricos psicológicos parecem tornar as mulheres mais propensas a transtornos emocionais, agravada pela existência de uma doença crônica como a cardiopatia.

DESCRITORES: Climatério; Menopausa; Cardiopatias; Psicologia; Sintomas psíquicos.

SÍNTOMAS PSICOLÓGICOS EN MUJERES EN CLIMATERIO Y CARDIÓPATAS

RESUMEN: Objetivo: investigar los síntomas climatéricos psicológicos en mujeres cardi**ó**patas. **Método:** estudio cuantitativo, realizado en Hospital Universitario en Nordeste de Brasil, en el periodo de octubre de 2016 a enero de 2017. Se entrevistaron individualmente 221 mujeres climatéricas cardiópatas atendidas en el Ambulatorio de Cardiología. Se realizaron análisis de estadística descriptiva, de asociación con el test no paramétrico de Chi cuadrado de independencia (χ^2) y test de Correlación de *Spearman*, con la ayuda del programa *SPSS Statistics 20*. **Resultados:** hubo predominio de síntomas climatéricos muy intensos como angustia/ansiedad, 75 (33,9%); agotamiento físico y mental, 61 (27,6%); estado de **ánimo depre**sivo, 54 (24,4%); nerviosismo, 59 (26,7%); y insomnio, 45 (20,4%). Hubo asociación significativa en los síntomas climatéricos psicológicos entre sí y entre los síntomas psicológicos y la depresión. **Conclusión:** los síntomas climatéricos psicológicos pueden dejar las mujeres m**á**s propensas a trastornos emocionales, agraviados por la existencia de una enfermedad crónica como la cardiopatía.

DESCRITORES: Climaterio; Menopausia; Cardiopatías; Psicología; Síntomas psíquicos.

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● INTRODUCTION

The climacteric period is defined as a biological phase of a woman's life that comprises the transition between the reproductive and non-reproductive periods. This usually occurs between 40 and 65 years of age and there may be symptoms caused by hypoestrogenism that can affect the well-being of the woman[1].

Approximately twenty million women are in the climacteric period in the United States, with the prospect of reaching sixty million in 2020. In Brazil, the trend towards population aging is intense, as recorded in other Latin American countries. The life expectancy of 78.5 years emphasizes the importance of the climacteric period/menopause, making the focus on quality of life an important health parameter in the female population[2-3]. There are many actions aimed at public policies for the pregnancy-puerperal cycle, for the control of cervical and breast cancer. However, in order to achieve the principles of integrality and equity in the healthcare system, the need to extend the approach to other dimensions at different moments in the life cycle, such as the climacteric period, for the sexual health of women[4].

Although the climacteric period is a natural phase of life, 60 to 80% of women report symptoms related to hypoestrogenism. The quantity and intensity of climacteric symptomatology is related not only to the basal hormonal levels of each woman, but also to ethnic, cultural, social, psychological, affective and professional aspects[5]. This phase of estrogenic decline increases the cardiovascular risk in women, this being the major cause of death in developed and developing countries[6]. In addition, there is concern about the effects of hormone replacement therapy (HRT) in climacteric women regarding the greater risk of developing a coronary event[7-8].

It is believed that women with similar symptomatology perceive the climacteric phase of life differently, with many understanding that this is a physiological period they can pass through like any other stage of life, however, this situation can be greatly aggravated by the presence of a pre-existing disease, such as heart disease. Knowledge about psychological climacteric symptomatology may guide the search for and selection of efficient strategies and actions, with a view to organizing the care and integrality in health promotion by promoting reflections regarding the relationships between two phenomena, the climacteric period and heart disease. Therefore, this study aimed to investigate psychological climacteric symptoms in women with heart disease.

● METHODOLOGY

This descriptive, quantitative study was performed at the Cardiology Outpatient Clinic of the University Hospital of the Federal University of Maranhão (HUUFMA), São0

Luís-MA, Brazil, from October 2016 to January 2017.

Inclusion criteria were women over 40 years of age who had heart disease and presented climacteric symptoms according to the Menopause Rating Scale (MRS)[9]. Women with speech difficulties, those who had mental disorders and those who had used HRT in the previous five years were not included as well as those that did not identify any climacteric symptoms according to the MRS criteria. All the women identified climacteric symptoms according to the MRS, therefore, there was no exclusion due to the absence of climacteric symptomatology.

The MRS is a scale for the assessment of the Quality of Life specifically during the menopause. It was developed in Germany and translated and validated in several countries, including Brazil, which presented a Pearson's correlation coefficient of 0.82 and the value of 0.86 for its internal consistency through Cronbach's alpha coefficient[10] . The women were individually questioned while they waited for the medical appointment, at which time the researcher introduced herself and invited them to identify

the psychological symptoms they recognized experiencing in the previous year (12 months). According to MRS, the following question was asked: "Which of the following symptoms would you say you have felt in the last 12 months and to what extent?". The participants were also investigated for the history of depression through the following question: "Have you ever had depression before or taken medicine for depression?".

For the data analysis, the IBM SPSS Statistics 20 (2011) program was used. Descriptive statistics of the variables were analyzed. The analysis of the association of the classification variables was made through the non-parametric Chi-square test of independence (χ^2). The relation of the climacteric psychological symptoms to each other was evaluated through Spearman's Correlation test. P values <0.05 were considered statistically significant.

The data were collected from the research database entitled "Climacteric women and coronary artery disease: revealing feelings and meanings", compiled in 2013, and approved by the Research Ethics Committee of the University of São Paulo at Ribeirão Preto College of Nursing (EERP-USP), having received authorization under No. 293.900.

● RESULTS

The study sample consisted of 221 female cardiac patients who presented climacteric symptoms according to the MRS Scale. The sociodemographic characterization of the participants is described below (Table 1). The results show a prevalence of women between the ages of 47 and 60, 141 (63.8%); mean age, 54.8 years; with complete elementary education, 28 (12.7%); white color, 134 (60.6%); in a stable union, 108 (48.9%); and from the capital, 90 (40.7%). Information that remained incomplete was classified as no information.

Table 1 - Sociodemographic characterization of climacteric women of the University Hospital in the Northeast of Brazil. São Luís, MA, Brazil, 2017 (continues)

Variable	n	%
Age		
40⊣ 46	30	13.6
47⊣ 53	70	31.7
54⊣ 60	71	32.1
61⊣ 67	47	21.2
68⊣ 73	3	1.4
Color		
White	134	60.6
Brown	62	28.1
Black	18	8.1
No information	7	3.2
Marital status		
Stable union*	108	48.9
Single	91	41.2
Widowed	7	3.2
Divorced	5	2.3
No information	10	4.5

Education		
Illiterate	6	2.7
Incomplete elementary education	26	11.8
Complete elementary education	28	12.7
Incomplete high school	3	1.4
Complete high school	23	10.4
Incomplete higher education	1	0.5
Complete higher education	3	1.4
No information	131	59.3
From		
Capital	90	40.7
Other municipalities of Maranhão	74	33.5
Other states	5	2.3
No information	52	23.5
Total	221	100

*Married or living with partner

Table 2 refers to the distribution of the climacteric women regarding the type of cardiopathy, HRT use for more than five years and the presence of depression. Coronary heart disease was prevalent in 68 (30.8%) cases, followed by hypertensive heart disease in 41 (18.5%) women. A significant number of women reported not using HRT 195 (88.2%) and those who used it, 26 (11.8%), were between 45 and 65 years of age. A total of 47 (21.3%) women reported the medical diagnosis of depression and of these 25 (53.1%) reported treatment with antidepressants.

Table 2 - Distribution of the type of heart disease, hormone replacement therapy and depression in climacteric women at the University Hospital in the Northeast of Brazil. São Luís, MA, Brazil, 2017

Variable	n	%
Cardiopathy		
Coronary Artery Disease	68	30.8
Hypertensive Cardiopathy	41	18.5
Arrhythmia	27	12.2
Valvopathy	27	12.2
Others	9	4.1
No information	49	22.2
Hormone Replacement Therapy		
No	195	88.2
Yes	26	11.8
Depression		
No	174	78.7
Yes	47	21.3
Total	221	100

Table 3 shows the degree of intensity of the psychological climacteric symptoms, according to the women with heart disease. There was a predominance of very intense symptoms such as anguish/anxiety, 75 (33.9%); physical and mental exhaustion, 61 (27.6%); depressed mood, 54 (24.4%); nervousness, 59 (26.7%); and insomnia, 45 (20.4%).

Table 3 - Distribution of the intensity of psychological symptoms in climacteric women of the University Hospital in the Northeast of Brazil. São Luís, MA, Brazil, 2017

Psychological symptoms	n	%
Insomnia		
None	60	27.1
Mild	33	14.9
Moderate	45	20.4
Intense	38	17.2
Very intense	45	20.4
Depressed mood		
None	51	23.1
Mild	54	24.4
Moderate	30	13.6
Intense	32	14.5
Very intense	54	24.4
Nervousness		
None	35	15.8
Mild	45	20.4
Moderate	40	18.1
Intense	42	19
Very intense	59	26.7
Anguish/Anxiety		
None	32	14.5
Mild	33	14.9
Moderate	49	22.2
Intense	32	14.5
Very intense	75	33.9
Physical and mental exhaustion		
None	33	14.9
Mild	37	16.7
Moderate	45	20.4
Intense	45	20.4
Very intense	61	27.6
Total	221	100

Figures 1 and 2 refer respectively to the association of climacteric psychological symptoms with the study variables and the correlation of climacteric psychological symptoms with each other.

Figure 1 - Association of the psychological symptoms in relation to sociodemographic and clinical variables in climacteric women of the University Hospital in Northeastern Brazil. São Luís, MA, Brazil, 2017

Psychological symptoms	Age	Color	Education	Marital status	From	HRT*	Pathology	Depression
Insomnia	0.228	0.380	0.112	0.483	0.810	0.400	0.898	0.057
Depressed mood	0.406	0.843	0.380	0.583	0.701	0.127	0.433	0.000
Nervousness	0.569	0.746	0.799	0.491	0.589	0.269	0.634	0.007
Anguish/ Anxiety	0.266	0.747	0.874	0.870	0.081	0.211	0.590	0.002
Physical and mental exhaustion	0.408	0.762	0.594	0.787	0.729	0.810	0.432	0.000

Chi-square test. *Hormone Replacement Therapy

Figure 2 – Correlation among psychological symptoms in climacteric women of the University Hospital in the Northeast of Brazil. São Luís, MA, Brazil, 2017

	Insomnia	Depressed mood	Nervousness	Anguish/ Anxiety	Physical and mental exhaustion
Insomnia		0.387*	0.402*	0.369*	0.399*
Depressed mood	0.387*		0.613*	0.583*	0.452*
Nervousness	0.402*	0.613*		0.722*	0.511*
Anguish/Anxiety	0.369*	0.583*	0.722*		0.430*
Physical and mental exhaustion	0.399*	0.452*	0.511*	0.430*	

Spearman's Correlation Test. * p<0.05

A significant association was identified between climacteric symptoms and depressive mood (p=0.000), nervousness (p=0.007), anguish/anxiety (p=0.002) and physical and mental exhaustion (p=0.000) and depression (Table 1). The level of significance to reject the null hypothesis was 5%, that is, a p-value <0.05 was considered statistically significant. A positive correlation was found between the psychological climacteric symptoms, indicating that as the intensity of one symptom increased this made the intensity of another symptom increase as well (Table 2).

● DISCUSSION

There are few population-based studies, national or Latin American on the epidemiology of the climacteric period and the menopause. The majority of the data available come from developed countries in North America and Europe. The shortage of studies highlights the need for a better evaluation of Brazilian women[11-12].

The period in which the woman can experience the climacteric symptoms is commonly from 40 years of age. In this study, the mean age was 54.8 years. Studies on climacteric women highlight a mean age between 43.8 and 54 years in developing countries, lower than that found in developed countries that occurs from 49.9 to 58.7 years[12]. This fact has led to discussions about the repercussions of menopause for women in different populations and ethnic groups, due to the accelerated process of population aging and the social and economic vulnerability of these countries. The prolongation of female life expectancy has generated a growing interest in the climacteric period and its implications for the health of women, as it is influenced by biological factors related to the reduction of estrogen levels, as well as social, economic, cultural and psychological factors related to the aging process[6,11].

Schooling may be fundamental for knowledge and understanding of climacteric changes, reducing myths and prejudices related to this phase[13]. The educational level of the subjects of this study was considered low, which determines a significant impact on the understanding and perception of aging, the climacteric period, pre-existing disease and the health status. Education, among the socioeconomic indicators, is considered to be the most powerful predictor of coronary risk factors, the impact of which is independent of income regarding these factors. In the climacteric woman with cardiopathies, schooling is an important variable for their health condition, it is a prerequisite for self-care, motivation and achievement of goals that lead to adherence to the treatment[14].

It is known that coronary disease in women is mainly due to the loss of the vasodilatory and protective effect of estrogen, both at the systemic and regional levels, which seems to be dependent on the endothelium[15]. In addition, climacteric women undergo adverse changes in the composition of body fat (lipids and lipoproteins) and vascular remodeling; as a consequence, the risk of heart disease increases[16]. Currently HRT is indicated only as a therapeutic measure for the relief of mild to moderate climacteric symptoms, generating benefits in the quality of life, which may explain the low number of women in the present study who had used it 26 (11.8%).

It is recognized that women respond differently to hormone therapy, especially with respect to the age of the menopause, the time of diagnosis of heart disease and the beginning and end of the therapy. There are beneficial effects of therapy for coronary morbidity and mortality when started in younger women (<60 years) and close to the beginning of menopause (<10 years since menopause). On the other hand, there seems to be a null and possibly adverse effect when initiated in older women (≥ 60 years) or in those with more time since the start of menopause (>20 years)[17].

Observational and randomized studies conclude that women who initiate HRT after 10 years of menopause are at increased risk of cardiovascular events, unlike those who initiate the therapy early, presenting a low risk, and responding in a varied manner. It is recommended to individualize HRT by treating women with the lowest effective dose and for the shortest possible time[6-7].

In the present study, no association was found regarding the psychological symptoms and the use of HRT. However, there was a positive correlation between the psychological symptoms and the presence of depression.

Symptoms of climacteric depression often occur in the form of somatic disorders, such as angina, gastrointestinal tract disorders, restless legs syndrome, pruritus, headaches, backaches, and joint pain[12,18]. Depression is considered a risk factor for heart disease in climacteric women. Consensus for treatment of depression indicates that medication and behavioral intervention are commonly effective and that the combination of these decreases the rate of recurrence of heart disease. There is no evidence available that demonstrates the treatment of depression to be different in cardiac patients, however, there is an increased risk of adverse cardiovascular events in those receiving treatment for depression[19].

From this perspective, there is a need for a greater interaction between the population of climacteric women, gynecologists and psychiatrists/psychologists, in order to promote detection of mental disorders and provide treatment to symptomatic women, whose symptoms highly compromise their quality of life. A significant relationship between the presence of depressive symptoms of moderate intensity and mood changes was highlighted, which may be the result of several factors, such as hormonal fluctuations that occur in this phase, social and emotional aspects such as changes in the family environment, marital separation, empty nest syndrome, illness or death of family members, decrease in income and retirement, among others. In addition, this is combined with the difficulty for women to seek psychological/psychiatric care for predominantly mild and moderate disorders, given the stigma that the specialty still carries[20].

In the present study, the frequency of moderate to very intense psychological climacteric symptoms was prevalent and there seems to be a correlation between the psychological and physical symptoms that potentiate the climacteric manifestation. It is believed that physical symptoms, such as hot flushes, are considered to be a common cause of insomnia during the climacteric period, being responsible for the increase in episodes of nocturnal awakening and the reduction of sleep, since hot flushes and nocturnal sweating have been associated with the cause of sleep alterations[12,21-22].

Irritability, low level of schooling, and memory loss may be considered risk factors for mild psychiatric disorders in women in menopausal transition that undergo outpatient screening, followed by home monitoring. Irritability can manifest in the presence of insomnia, anxiety and vasomotor complaints[23]. Significant estrogen deficiency, in addition to leading to anxiety, may be manifested by the presence of irritability, muscular tension, restlessness, tachycardia, sweating, fatigue and excessive preoccupation with problems. Menopause combined with an unfavorable socioeconomic condition has a direct influence on the determinism of the onset of anxiety[11].

A multicenter study conducted in the United States found a significant association between early menopause and the occurrence of fatigue and intolerance to activities[22]. National studies have shown that physical and mental exhaustion is present in women in all stages of menopausal transition. Fatigue has been related to worsening of the quality of life of women with heart disease, since the pathophysiology of heart disease itself has a physical limitation, making it difficult for these women to perform their daily activities and chores. In this way, it compromises their autonomy and generates a negative impact, both in their life habits and in their relationships in the family dynamics[24].

Symptoms can occur under the influence of several factors, which may positively or negatively impact the activities performed, the daily life of women and their professional, family and social relationships. Some women, on the other hand, may be more adaptive, discover new activities, carry out plans and perform new occupational roles. Social prejudice and the women's lack of knowledge about the changes that occur during this period constitute barriers, affecting the necessary care for the health and, consequently, impairing their quality of life[25].

It should be emphasized, therefore, that the climacteric period is a phase of life that makes women more prone to symptoms, such as irritability, nervousness and frequent mood changes, and the symptoms are more intense in women with chronic diseases[11]. During menopause, psychological symptoms can have a significant impact on women's quality of life and their ability to work, which favors susceptibility to depression and the onset of other symptoms, further aggravated by heart disease.

Because many women have depressed mood due to menopause, many are diagnosed with depression. A study that evaluated the quality of life in climacteric women attended in primary care showed a significant number of women who used tranquilizers due to climacteric complaints. However, no correlation was found between this manifestation and the climacteric period, unlike between it and the presence of depression, which could represent in some cases a diagnostic error[22,26]. Longitudinal studies have shown that women with severe psychological symptoms, emotional disorders or depression are more likely to have coronary events. However, it is not known to what extent the psychological symptoms are influenced by the heart disease or whether the heart disease interfered in the climacteric symptomatology[27].

Anxiety is linked to feelings of fear, tension and danger, triggered by contact with something new or in unexpected or unknown situations, as is the case of the climacteric period, which for many women is an unknown phase. The symptoms are very diverse, incuding tachycardia, tremors, muscle tension, increased urge to urinate and defecate, headache and epigastralgia, among others. This manifestation is associated with worse quality of life results, especially in the psychological and social dimensions, in patients with chronic diseases. Thus, it has been questioned whether anxiety is the cause or consequence of the diseases, since the relationship between psychological symptoms and heart diseases has been considered bidirectional, that is, situations of stress and anxiety may have an influence on the onset of heart disease; while heart disease can generate stress and anxiety symptoms[28].

An association between psychological symptoms and diseases has been found, that is, emotions can influence the onset of specific diseases or may be consequences of diseases, influencing their prognosis. The relationship between emotions and cardiovascular health is therefore bidirectional, having a cumulative effect over time. Anxiety, for example, in addition to climacteric symptoms, is common in heart disease and is independently related to increased morbidity and mortality, especially when associated with the presence of depression[29].

It is assumed that women's changes due to aging and the climacteric period generate feelings such as anguish, anxiety and insecurity that, together with the experience of heart disease, produce a sense of fear, finitude and threat to their lives. Experiences with a completely different reality, living with the climacteric symptoms and a stigmatizing disease, often promote negative feelings of confrontation.

The limitations of the study are the absence of some gynecological, obstetric and climacteric information, which could contribute to greater accuracy in the data analysis.

● CONCLUSIONS

Psychological climacteric symptoms, identified as anguish, anxiety, physical and mental exhaustion, depressed mood, nervousness and insomnia, seem to make women more prone to emotional disorders. In addition, heart disease is one of the main causes for the development of psychological symptoms, since chronic disease is constantly associated with an increase in the prevalence of depressive symptoms and depression itself.

A complex association between these two phenomena, climacteric and heart disease, can be observed and should therefore be more studied and understood, constituting a priority in Public Health and generating subsidies for comprehensive care. Understanding climacteric symptomatology in women with heart disease may be the basis for more effective therapeutic strategies for aging, the climacteric period and cardiology and is essential for a healthier life experience in women during this phase of life (climacteric period) and, consequently, in the experience of a stigmatizing disease (heart disease).

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