INFLUENCE OF CLIMACTERIC SYMPTOMATOLOGY ON THE SEXUAL FUNCTION OF PANKARARU INDIGENOUS WOMEN

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ABSTRACT

Objectives: The aim of this study was to explore the statistical association between climacteric symptoms and sexual function in women of the Pankararu ethnic group.

Study design: A cross-sectional descriptive study was carried out with 188 indigenous women, aged between 35 and 65 years, for which a sample of 108 women who met the inclusion and exclusion criteria was obtained, and answered all three questionnaires: one socioeconomic and demographic, the Menopause Rating Scale (MRS) and the Sexual Quotient-female version (SQF). The study site was the municipalities of Tacaratu and Petrolândia, Pernambuco State, Brazil, during the months of August and September 2019.

Main outcome measures: Assessment of the intensity of climacteric symptomatology and the overall quality of sexual performance/satisfaction.

Results: The mean age was 44.4 years, with the majority (72.2%) between 35 and 49 years. The prevalence of climacteric symptoms was high (67.6%), with intensity directly associated with age. The most intense symptoms included physical and mental exhaustion (16.7%), shortness of breath, sweating and hot flashes (13.0%) and muscle and joint problems (12.0%). In sexual function, 51.9% achieved a score indicative of female sexual dysfunction and 35.2% of the women were categorized as having poor or unfavorable performance/satisfaction and inversely associated with age, with the worst being in the foreplay sexual and comfort domains.

Conclusions: The prevalence of climacteric symptoms was high among the indigenous women studied, with increasing intensity with age and inversely associated with satisfactory sexual performance/satisfaction, indicating an association between advancing age, increased climacteric symptoms and reduced quality of sexual function.

Keywords: Climacteric. Menopause. Menopause Rating Scale. Sexual Quotient Female version. Sexual function. Quality of life. Health of indigenous populations.

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1 INTRODUCTION

The transition to menopause is a remarkable phase in a woman's life, marked by endocrine changes that can affect various aspects of her health and well-being [1,2]. The World Health Organization (WHO) describes the climacteric as a natural biological stage in a woman's life and not as a pathological condition. This phase, which occurs from 35 to 65 years old, marks the transition from the reproductive to the non-reproductive period. Within this phase, menopause is a remarkable event that usually happens between the ages of 48 and 50 [3–6].

Among the most commonly reported symptoms are changes in sexual function and climacteric symptoms, which include hot flashes, night sweats, mood swings, and sleep difficulties. These changes can have a profound impact on women's quality of life [7–10].

While most research on menopause and sexual function has focused on urban and Western populations, there is a lack of studies that address these issues in diverse cultural and ethnic contexts. Specifically, little is known about how these experiences manifest in indigenous communities, who may have different cultural and social perspectives on menopause and sexuality [11].

Although menopause has been accepted as inevitable and a natural phase of women's life, including the benefit of the cessation of menstruation, it has also been associated with some negative feelings, such as loss of fertility and youth, and the appearance of bothersome symptoms [12]. Substantially these aspects can affect the quality of life related to health, sexual life, daily and work activities [13].

Previous studies have identified geographic and ethno-racial differences in the severity and duration of menopausal symptoms [14-16]. However, in some studies, most women classify climacteric symptoms as severe (56.3%), in addition to loss of sexual interest (41%) [17]. This condition can persist for up to 10 years [18,19] and commonly results in seeking treatment [20,21], which may indicate a general vulnerability to chronic conditions related to menopausal changes [22].

Considering these gaps in the literature, the objective of the research was to explore the association between climacteric symptoms and sexual function in climacteric women, seeking to understand how climacteric symptoms present in the Pankararu indigenous population and what is their impact on sexual function. Climacteric symptomatology is thought to be positively associated with a decrease in sexual function in Pankararu indigenous women, and symptom intensity is expected to increase with age, inversely associated with sexual satisfaction.

To investigate these issues, the research uses a descriptive and cross-sectional approach, employing instruments such as the Menopause Rating Scale (MRS) [23] and the Sexual Quotient-female version (SQF) [8], to assess these relationships. By exploring these associations, this study aims to shed light on the climacteric and sexual experience in a culturally distinct population, contributing to a broader and more inclusive understanding of climacteric in diverse contexts.

2 METHODS

2.1 STUDY DESIGN

A descriptive study with a cross-sectional approach was carried out with 108 indigenous women from the Entre Serras Pankararu People, in the cities of Tacaratu and Petrolândia, Pernambuco, between August and September 2019. Data were collected through structured interviews, lasting 30 to 40 minutes, using specific questionnaires: Socioeconomic and Demographic, Menopause Rating Scale (MRS) [12] and Sexual Quotient-female version (SQF) [8].

The sample was random, including women who had been sexually active in the last six months and excluding those who used hormonal therapies, continuous use of medications that interfere with sexuality or had undergone surgical menopause, criteria necessary for the application of the questionnaires, which were previously validated for the study population.

The interviewers were female health professionals, accepted by the community and trained to ensure consistency in the application of the questionnaires, being blinded to the specific objectives of the study to minimize performance bias and losses to follow-up. The interviews were conducted in private and comfortable environments for the participants, such as under a tree, in order to ensure comfort and privacy.

Additional efforts were made to avoid response bias by ensuring that prevalence estimates and associations were accurate. The socioeconomic and demographic questionnaire included open-ended and closed-ended questions, as well as details on clinical, behavioral, and cultural aspects, to facilitate the transition to the deeper and more central questions of the study.

Statistical analysis controlled for confounding factors using multivariate logistic regression, with analyses stratified by age and menopausal status. The response rate was 97%, and there were no significant differences between participants and non-participants.

The ordinal categorical variables of interest in the study are the intensity of climacteric symptomatology (independent variable) and the quality of sexual performance/satisfaction (dependent variable), measured by the MRS and SQF questionnaires, respectively. These

variables were chosen due to their cause-and-effect relationship, allowing us to test hypotheses and analyze their associations. The quantitative variable age group was divided into two subgroups: 35 to 49 years and 50 to 65 years, often used in similar studies because it documents different menopausal states [24]. The study was conducted in accordance with ethical standards, with the approval of two ethics committees, one from the University of Pernambuco and the other from the national level. No financial incentives were used for participation.

2.2 REVIEWS

The Menopause Rating Scale (MRS) is an instrument of German origin, validated and adapted for use in 25 languages. Its objective is to assess the intensity of climacteric symptoms, and consists of 11 questions distributed in three domains: Somatovegetative symptoms (hot flushes, heart discomfort, sleep problems, and muscle and joint pain); Psychological symptoms (depressive mood, irritability, anxiety, physical and mental exhaustion); and Urogenital symptoms (urinary and sexual problems and vaginal dryness). The higher the score, the more severe the symptoms and the worse the woman's quality of life. The overall score ranges from 0 to 44 and the intensity of the symptomatology is classified as: absent or occasional (0-4 points), mild (5-8 points), moderate (9-15 points) and severe (>16 points) [12].

The Sexual Quotient-female version (SQF), of Brazilian origin, with cultural adaptations made in other populations, evaluates the general quality of sexual performance and satisfaction through 10 questions distributed in five domains: Sexual desire and interest; Foreplay; Personal arousal and attunement with the partner; Comfort; and Orgasm and satisfaction. The final score classifies sexual performance/satisfaction in the following categories: null to poor (0 to 20 points), poor to unfavorable (22 to 40 points), unfavorable to fair (42 to 60 points), fair to good (62 to 80 points), and good to excellent (82 to 100 points). Higher scores indicate better sexual performance/satisfaction, with 60 being the cutoff point for screening for female sexual dysfunction [8].

2.3 CALCULATION OF THE PREVALENCE OF CLIMACTERIC SYMPTOMS BY MRS

We used the MRS to calculate the prevalence of climacteric symptoms with intensity from absent to severe [12]. The interviewees were in different menopausal states: late reproductive (47.2%), menopausal transition (26.9%) and postmenopausal (25.9%) [24]. These and other detailed statistics are described in Table 1. Prevalence was determined globally.

2.4 CALCULATION OF THE PREVALENCE OF SEXUAL RESPONSE BY SQF

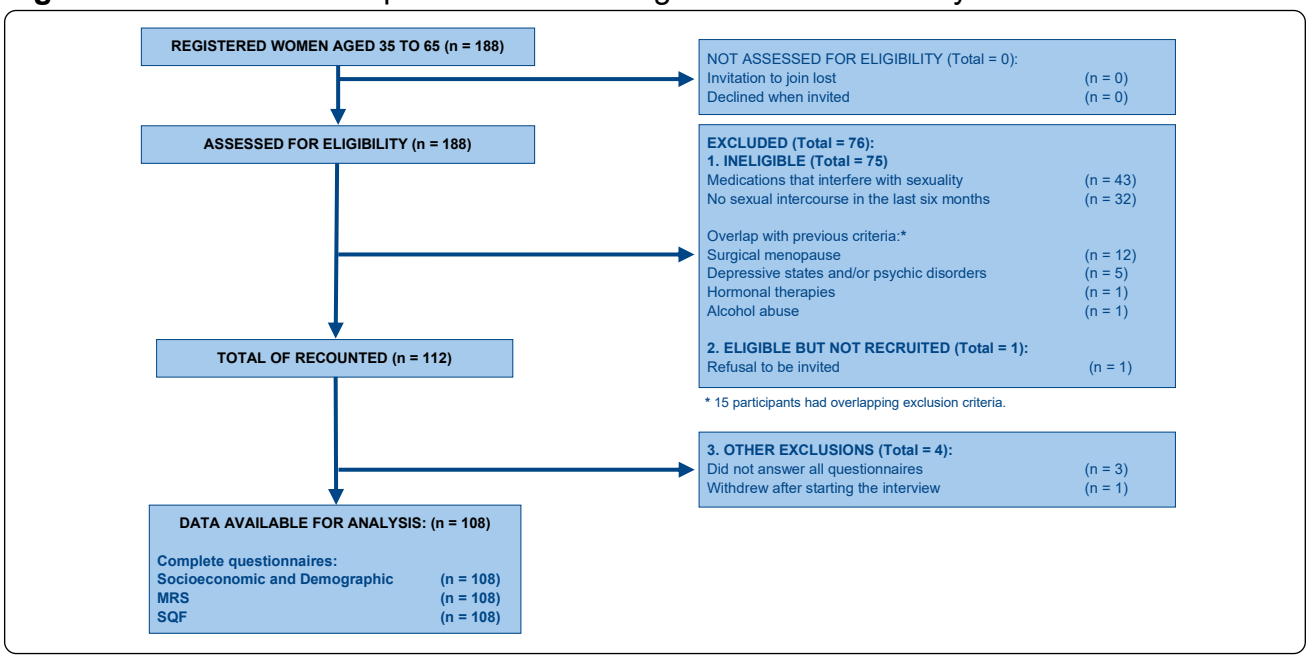
We used the SQF to calculate the prevalence of overall sexual performance/satisfaction quality from null to excellent [8]. Prevalence was determined globally.

2.5 STATISTICAL ANALYSIS

Data analysis involved the descriptive summarization of continuous and categorical variables, using Excel for the database and STATA for statistical analysis. An exploratory analysis was carried out focusing on varied characteristics of the respondents and statistical tests were applied to investigate the relationship between climacteric symptoms and sexual function, with adjustments for confounding factors via multivariate logistic regression, resulting in odds ratios with 95% confidence intervals, adopting a significance level of 5%.

Participants were recruited according to the flowchart shown in Figure 1. Of the participants evaluated, 76 were excluded because they did not meet the eligibility criteria, with the most frequent reasons being the use of medications that interfere with sexuality and the absence of recent sexual activity.

Figure 1. Flowchart of the process of recruiting women for the study



3 RESULTS

3.1 CHARACTERISTICS OF THE PARTICIPANTS

The study participants were all women aged between 35 and 65 years, derived from the registration list of the population served by the Pankararu Entre Serras Base Pole in 2019, which had a total of 188 eligible women. The final sample consisted of 108 participants (57.4% of the total eligible), determined by the inclusion and exclusion criteria, who fully completed all three questionnaires. Only 1.6% of the initially selected participants had missing data and were excluded from the main analysis. However, we performed a sensitivity analysis using multiple imputation to assess the potential impact of these missing data, which did not substantially alter the results and avoided bias.

Table 1. Sociodemographic and reproductive characteristics of the participants

Variable	n = 108	%
Age range (in years)		
35 - 49	78	72.2
50 - 65	30	27.8
Menopausal states		
Late reproductive	51	47.2
Menopausal transition	29	26.9
Post-menopause	28	25.9
Ascendancy		
Indigenous father and mother	68	63.0
Indigenous mother	29	26.8
Indigenous father	11	10.2
Estado marital		
Single (including separated/divorced/widowed)	15	13.9
Married (including common-law marriage)	93	86.1
Religion		
Indigenous religion ("*Encantados")*	108	100.0
Indigenous and Catholic religion	107	99.1
Indigenous and Evangelical Religion	1	0.9
Education (completed years of study)		
Didn't study	4	3.7
From 1 - 5	40	37.0
From 6 - 9	39	36.1
From 10 - 12	10	9.3
More than 12	15	13.9
Profession		
Farmer	84	77.8
Other (1)	24	22.2
Paid	26	24.1
Unpaid	82	75.9
Auxílio Brasil Program (formerly Bolsa Família)		
Receives	57	52.8
Does not receive	51	47.2
Single source of income	11	19.3
Per capita income (minimum wages) (2)		
Up to (1/2)	40	37.0
More than (1/2) to 1	17	15.7
More than 1	22	20.4
Don't know or don't want to inform	29	26.9

(1) Teacher, general services assistant, cook, indigenous health agent, nursing technician, janitor, and street sweeper.
(2) Income values were calculated based on the minimum wage in force (R$ 880.00) in 2016.

Most women (72.2%) were between 35 and 49 years old, the mean age was 44.4 ± 8.3 years (median of 42 years), 76.8% had only attended elementary school, 77.8% declared themselves to be farmers, 75.9% had no paid profession and almost a fifth of all interviewees (19.3%) declared that they lived exclusively with resources from the Auxílio Brasil Program, a Conditional Cash Transfer Program (PTCR) of the Federal Government (Table 1).

3.2 PREVALENCE OF MENOPAUSAL SYMPTOMS WITH MRS

The prevalence of climacteric symptoms was 67.6%, highlighting symptoms such as: depressive mood, physical and mental exhaustion, and irritability. About half of the women reported anxiety, shortness of breath, sweating, hot flashes, sexual problems, muscle and joint problems. Less common symptoms included bladder problems and vaginal dryness, which were present in one third of the interviewees (Table 2). According to MRS, 32.5% of women had no symptoms or were occasional.

In the analysis of climacteric symptoms, higher scores indicated greater symptomatic severity, especially in the psychological domain, suggesting a reduced quality of life. The general intensity of symptoms was classified as moderate, with the psychological domain also moderate, while the somatovegetative and urogenital domains were considered mild. About 27.8% of the interviewees reported severity in the psychological domain, against 15.7% and 5.6% for the urogenital and somatovegetative domains, respectively.

Table 2. Prevalence of climacteric symptoms by Domain

Variable	n = 108	%
Psychological domain		
Depressed mood	73	(67.6%)
Physical and mental exhaustion	70	(64.8%)
Irritability	66	(61.1%)
Anxiety	56	(51.9%)
Urogenital domain		
Sexual problems	59	(54.6%)
Vaginal dryness	36	(33.3%)
Bladder problems	31	(28.7%)
Somatogevetative domain		
Joint and muscular discomfort	58	(53.7%)
Shortness of breath, sweating, hot flashes	56	(51.9%)
Sleep problems	52	(48.1%)
Heart discomfort	47	(43.5%)

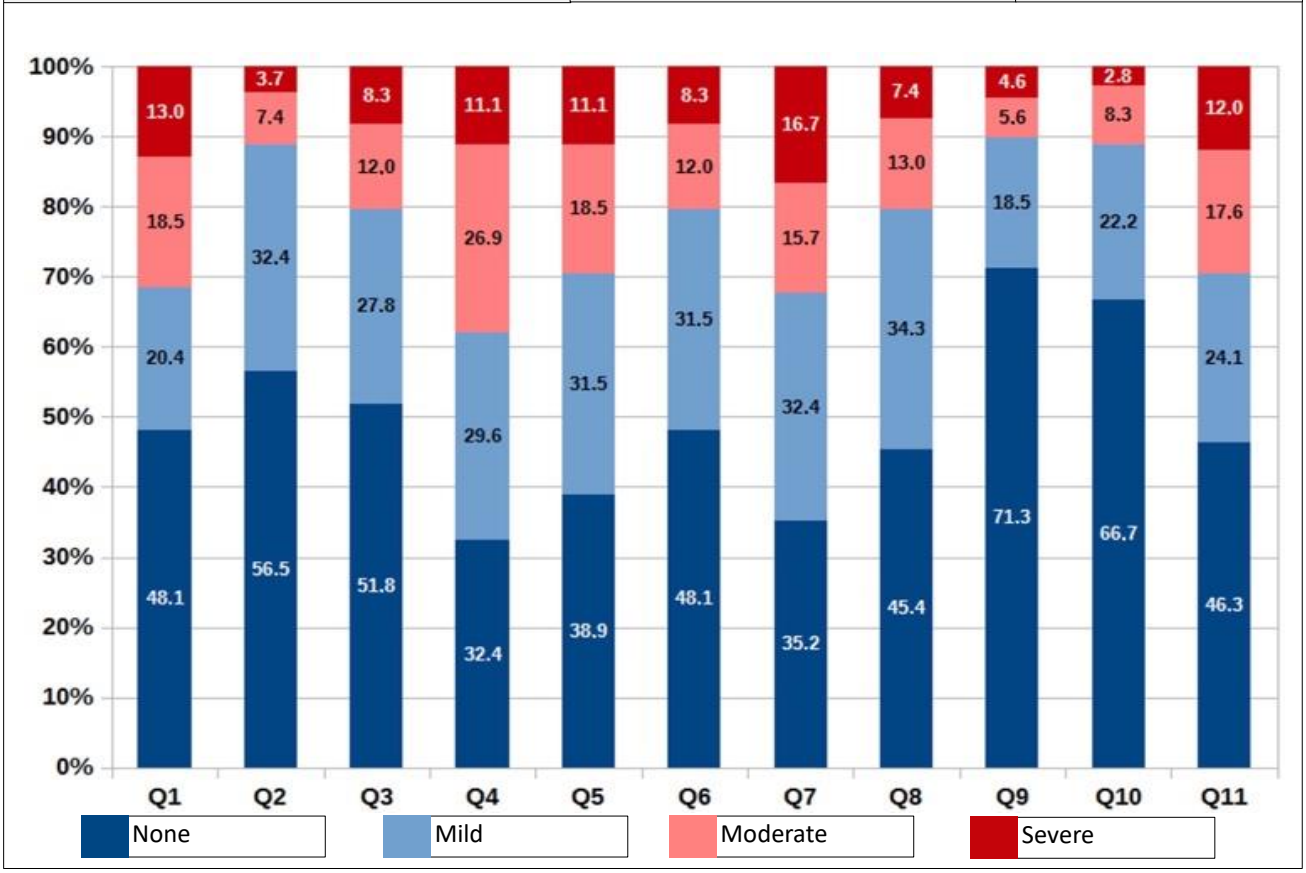
Note: A symptom was considered present if the score was above zero (ranging from mild to severe).

Analyzing the distribution of the scores in each of the climacteric symptoms separately (Figure 2), the symptoms in which more women reported severe or very severe intensity

were: physical and mental exhaustion (16.7%), shortness of breath, sweating and hot flashes (13%) and muscle and joint problems (12%).

Figure 2. Distribution of climacteric symptom intensity (n=108)

Q1. Shortness of breath, sweating, hot flashes; **Q2**. Heart discomfort; **Q3**. Sleep problems; **Q4**. Estado de ânimo depressivo;	**Q5**. Irritability; **Q6**. Anxiety; **Q7**. Physical and mental exhaustion; **Q8**. Sexual problems;	**Q9**. Bladder problems; **Q10**. Vaginal dryness; **Q11**. Joint and muscular discomfort.



Note: Q = question.

3.3 PREVALENCE OF SEXUAL RESPONSE WITH SQF

In the evaluation of sexual function, most of the interviewees reported being stimulated by foreplay (81.5%) and by increased arousal with the partner (77.8%). About two-thirds showed enough interest in sex to be actively involved, while just over half (53.7%) maintained focus during the act. Less than half (47.2%) reached orgasm, 25% reported pain during sex (Figure 3). A quarter of the women had never experienced orgasm (Table 3).

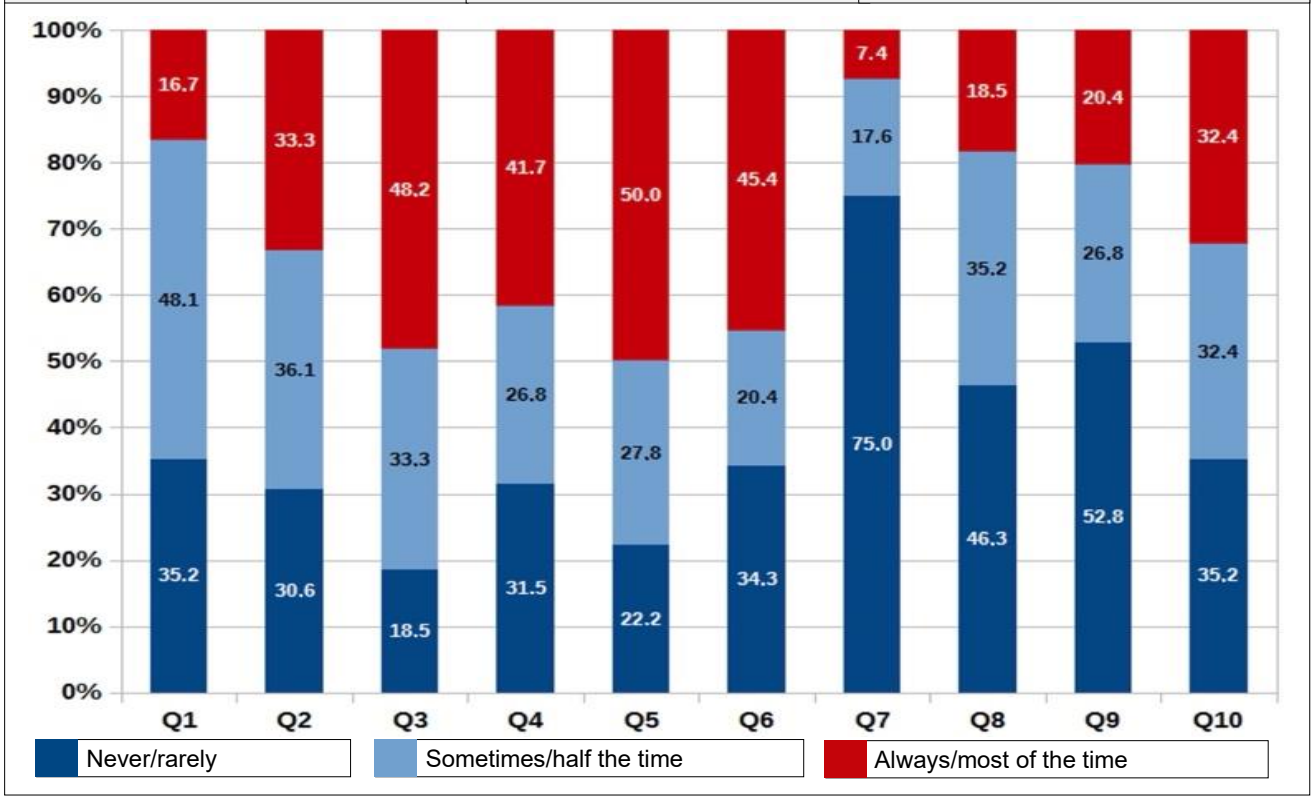
Table 3. Prevalence of aspects of sexual function by Domain

Variable	n = 108	%
Desire domain		
Interest in sex is enough to participate in the relationship willingly	75	69.4
Spontaneously thinks about sex, remembers sex, or imagines doing it	70	64.8
Can engage without being distracted during intercourse	58	53.7
Foreplay domain		
Foreplay encourages her to continue sexual intercourse	88	81.5
Excitation domain		
As your partner's arousal increases, you feel more stimulated	84	77.8
It is usually lubricated during sexual intercourse	74	68.5
Comfort domain		
Relaxes the vagina enough to facilitate penis penetration	71	65.7
Feels pain during sexual intercourse, when the penis penetrates the vagina	27	25.0
Orgasm domain		
Satisfaction in sexual intercourse makes you want to do it other times, on other days	70	64.8
You can reach orgasm during sexual intercourse	51	47.2

Note: 27 women (25.0%) reported that they never reached orgasm in their lives.

Figure 3. Frequency distribution of sexual performance/satisfaction (n = 108).

Q1. Spontaneously thinks about sex; **Q2**. Interest in sex is enough to participate in the relationship willingly; **Q3**. Foreplay encourages her to continue sexual intercourse; **Q4**. It is usually lubricated during sexual intercourse;	**Q5**. With your partner's arousal, you feel more stimulated; **Q6**. Relaxes the vagina enough to facilitate penis penetration; **Q7**. You feel pain during sexual intercourse when the penis penetrates your vagina;	**Q8**. Can get involved, without being distracted, during sexual intercourse; **Q9**. You can reach orgasm during sexual intercourse; **Q10**. Satisfaction in sexual intercourse makes you want to do it other times, on other days.



Note: Q = question.

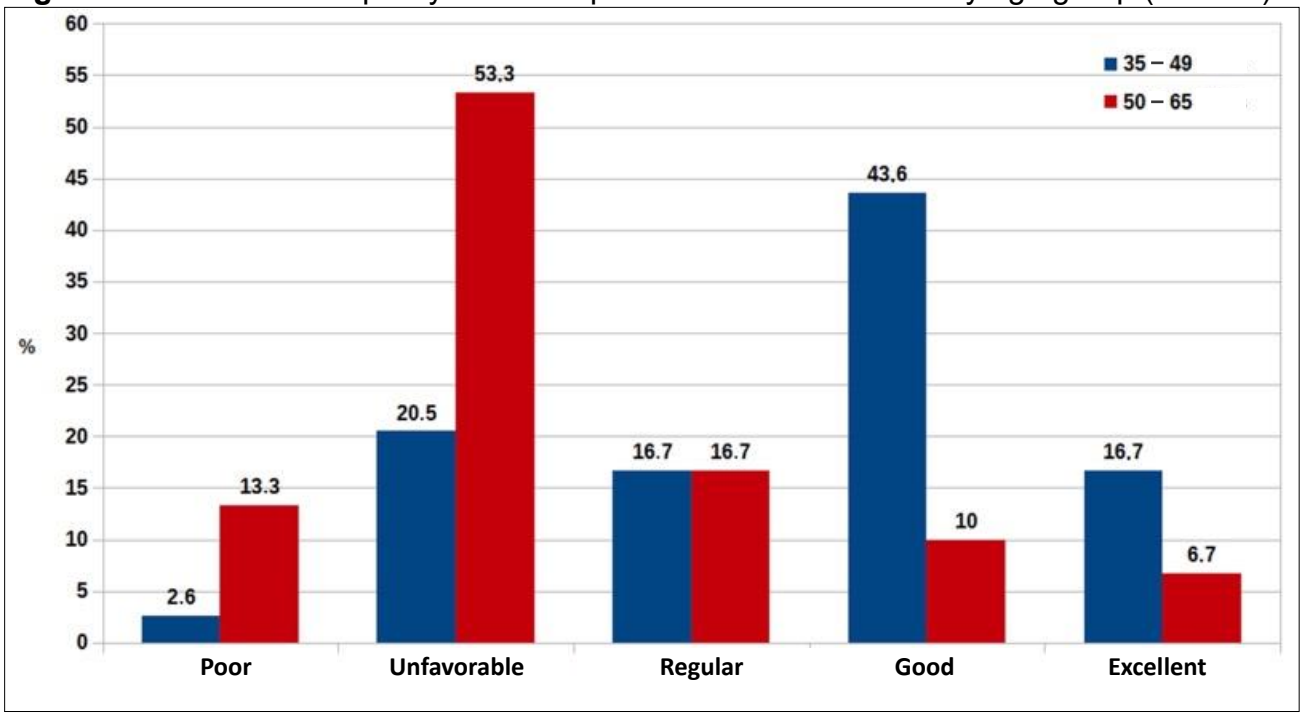
In the analysis of the median of sexual performance points in the climacteric, the highest scores were observed in the comfort domain ("approximately 50% of the time") and

in the desire and orgasm domains ("sometimes"). The analysis indicated that pain during sexual intercourse is "never or rarely" experienced by women (75%).

Among the interviewees, 51.9% had a score ≤60 on the SQF, indicating possible sexual dysfunction. While 35.2% were categorized with poor to unfavorable sexual performance, 48.2% had good to excellent performance.

The analysis by age group showed an association between age and sexual performance among indigenous women aged 35 to 65 years. Participants aged 50 to 65 years had a higher prevalence of poor to unfavorable sexual performance (66.6%), in contrast to 23.1% among those aged 35 to 49 years. Good to excellent sexual performance (60.3%) was more common in younger women (Figure 4).

Figure 4. Distribution of quality of sexual performance/satisfaction by age group (n = 108)



Note: Association: p < 0.001.

3.4 ASSOCIATION BETWEEN CLIMACTERIC SYMPTOMATOLOGY AND SEXUAL FUNCTION

Women with moderate to severe climacteric symptoms are more likely (65.8%) to have unfavorable sexual performance. On the other hand, those without symptoms or with occasional symptoms have a 46.2% probability of achieving regular to excellent sexual performance, showing that more pronounced climacteric symptoms have a statistically significant association with a worse quality of sexual life (Table 4).

Table 4. Association between intensity of climacteric symptoms and quality of sexual performance/satisfaction

Symptoms climacteric	Sexual function (n = 108)						p-valor
	Unfavorable		Regular		Good/Excellent		
	n	%	n	%	n	%	
Absent or occasional	6	(15.8)	5	(27.8)	24	(46.2)	0.027[a]
Mild	7	(18.4)	4	(22.2)	10	(19.2)	
Moderate or severe	25	(65.8)	9	(50.0)	18	(34.6)	
Total	38	(100.0)	18	(100.0)	52	(100.0)	

[a] Statistically significant difference ($p < 0.05$).

3.5 PERCEPTION OF DISCOMFORT ASSOCIATED WITH CLIMACTERIC SYMPTOMS AND SEXUAL FUNCTION

Perceptions of the discomfort of climacteric symptoms and sexual function varied among participants, but there was a general acceptance of menopause as a natural phenomenon, mainly due to the end of menstruation. Physical and mental exhaustion was the most prevalent symptom and most associated with unfavorable sexual performance/satisfaction. And, secondly, shortness of breath, sweating and hot flashes, but with less damage to sexual function. Tiredness, muscle and joint pain were symptoms less reported as negative in this aspect. Weight gain was the most bothersome finding.

3.6 IMPACT ON LABOR PRODUCTIVITY AND DAILY ACTIVITIES

Night sweats had a greater impact on daily activities (e.g., work from home, shopping, childcare, exercise, and study) than on work activities. However, the impact on labor productivity or daily activities was generally low. This trend was amplified when the data was filtered by women complaining of physical and mental exhaustion.

3.7 SEEKING HEALTH SERVICES

Few women have sought doctors or health care teams in the past 12 months to discuss climacteric symptoms or sexual function, often because they perceive these symptoms as natural and temporary. Most preferred consultations with general practitioners to gynecologists or menopause specialists. Although they consider the latter as the main sources of advice, there is limited availability of free specialized medical services and, when they exist, they are more often aimed at women in the reproductive period.

3.8 TREATMENT FOR SYMPTOMS

Some women have opted for natural treatments with specialists in traditional indigenous medicine, not necessarily to directly treat symptoms of climacteric or sexual function, but due to these symptoms being exacerbated by other perceived problems,

especially mental ones. Knowledge about these treatments is limited to what is common in the community. Those who used over-the-counter supplements and medications or were on hormone replacement therapy were excluded from the study due to the possibility of interference with natural symptoms.

3.9 OTHER APPROACHES TO COPING WITH CLIMACTERIC SYMPTOMS

The vast majority of women (65%) adopted lifestyle changes to cope with menopausal symptoms, with variations in the activities adopted. More than half reported an improvement in climacteric symptoms and sexual function after these changes.

3.10 USE OF OVER-THE-COUNTER PRODUCTS

Between 32% and 49% of participants used over-the-counter products such as vitamins D and E, soy products, calcium, sage, evening primrose oil, sleep aids, black cohosh, ginkgo biloba, St. John's wort, star flower oil, agnus-castus, to treat menopausal symptoms. The effectiveness of these products was perceived by approximately half of the users. However, there is little information on Integrative and Complementary Practices (PICs) in the region.

3.11 LOW SUPPLY OF FREE SPECIALIZED MEDICAL SERVICES AND DIRECT COSTS

Medical visits were the largest monthly cost in treating menopausal symptoms, with less than 5% of women seeking paid health services. Some reported the need to compare prices before deciding whether or not to purchase the prescribed medication.

4 DISCUSSION

Depressive mood emerged as the most prevalent symptom, affecting most participants, followed by physical and mental exhaustion and irritability suggesting a considerable impact on well-being during climacteric.

Comparison with other studies indicates variations, up and down, in symptoms and quality of life among different populations, suggesting the influence of cultural, age, and health factors on the experience of climacteric. These findings are comparable, although with variations, to those of previous studies [25-30], such as the international Vaginal Health survey, where the most frequent symptoms in 3,520 postmenopausal women were somatogenic, night sweats, interrupted sleep, and weight gain [28], as well as in Nepalese women [30] and in Brazilian women [6], highlighting the significant impact of the climacteric on psychological well-being.

The results of this survey demonstrate that the prevalence of climacteric symptoms is relatively high and causes negative impacts on the lives of indigenous women, especially when associated with sexual function and with age. Globally, the prevalence of climacteric symptoms has shown differences [28]. Other studies have reported similar findings, such as a study of postmenopausal women showing that these symptoms were associated with humanistic and economic outcomes [27]. A telephone survey in several European countries found that the most frequent symptoms of menopause were shortness of breath, sweating, hot flashes, insomnia, irritability, mood swings, and reduced sexual desire [29].

The urogenital dimension was also explored, revealing the prevalence of women with bladder problems. This result contrasts with studies in indigenous populations, such as the Zenúes of Colombia, the Mayas of Guatemala, and the Movimas of Bolivia, where urogenital symptoms were the most prevalent, reaching twice those found in this study [31,32]. This suggests differences possibly related to age, childbirth care, and racial or sociocultural factors, requiring specific research for a more in-depth understanding.

Quality of life, assessed by the total MRS score, indicated a moderate intensity of climacteric symptoms, with variations between the psychological, somatovegetative and urogenital domains. Compared to studies of other Latin American and global populations, there is a consistency in the patterns of symptoms, although with generally higher intensities [10,16,32-35].

Regarding the association between the intensity of climacteric symptoms, through the MRS, and the sexual performance, via SQF, of indigenous women, no Brazilian or international studies were found that would allow comparisons with our findings using the same data collection instruments. Thus, the discussion of this topic was based on studies that similarly indicated that the intensity of climacteric symptoms can negatively affect sexuality, despite being carried out in non-indigenous populations [35-38].

Brazilian studies using the SQF found that one-fifth of the participants had a poor or unfavorable pattern of sexual performance, and about half of the women studied had sexual dysfunction [39] and no desire to have sex again on other days [40]. As found in our study, other studies suggest that symptoms in the psychological domain (depressive mood, irritability, anxiety, and physical and mental exhaustion) were the most associated with sexual dysfunction [35,41-43], suggesting that in this disorder the psychological state may be its greatest determinant.

In this study with women from the Entre Serras Pankararu people, it was observed that more than half reported never or rarely reaching orgasm. Of these, a quarter had never experienced an orgasm in their lives, and the same number reported feeling pain during sex.

In addition, approximately half of the interviewees are at risk of facing some level of sexual dysfunction. These findings indicate that, for many of these women, sexual experiences are not fully satisfactory, as other studies have found [39] and exactly the opposite when the participants did regular physical activity [38].

Interestingly, despite the challenges brought by the climacteric, many women manage to maintain a satisfying sex life. This underscores the importance of a comprehensive care approach and specific drug interventions to reduce the impact of symptoms on sexual life. In exploring the prevalence of sexual dysfunction, we highlight the need to take into account biopsychosocial aspects in the management of climacteric. This investigation broadens the understanding of the relationship between climacteric symptoms and female sexuality, underlining the importance of inter- and multidisciplinary health care, both inside and outside the territories.

This work enriches knowledge about climacteric among indigenous women Entre Serras Pankararu, emphasizing the variety of experiences and the need for health care that is personalized and culturally sensitive. A strength of our study is its originality in associating climacteric symptoms with sexual function in an indigenous population, bringing valuable insights from a realistic and population-based perspective. Also relevant is the possibility that women of this ethnicity may not seek medical help because they consider their symptoms tolerable. However, we faced limitations, such as selection and memory bias, since the participants needed to volunteer and remember, not only to be using treatments and/or medications that could interfere with natural experience, but also to report past experiences at this stage of life. Longitudinal studies to explore the causal relationships between climacteric symptoms and sexual function could be promising future strategies.

We believe that the observed differences in symptom intensity reflect more cultural nuances than ethnic-racial distinctions. However, studies indicate variations in the frequency and severity of climacteric symptoms between different races [44,45]. While menopause is a natural and inevitable process, positively marked by the cessation of menstruation for some women, it also carries negative connotations such as loss of fertility and youth, as well as uncomfortable symptoms. A 2021 Italian survey showed that almost half of women have felt a significant impact on their sex life due to physical or psychological changes. Only a few investigated saw menopause as a positive phase to avoid pregnancy. This study noted that menopausal symptoms affect everyday activities more than work [22].

Opinions about menopause were consistent, despite individual variations, possibly due to differences in health education and awareness. Notably, the hesitancy to seek treatment, common in other regions of the world, was evident here. Even with knowledge

about the symptoms, many women delay seeking help or do not treat their symptoms, suggesting the need for more guidance and new treatment options [46-47].

In summary, although lifestyle changes relieved symptoms in more than half of the women, for the rest no significant improvements were observed. This highlights the need for caution regarding non-hormonal therapies and over-the-counter products, such as herbal treatments and certain lifestyle adaptations (e.g., cooling techniques and the avoidance of "triggers"), which can delay the implementation of effective therapies for menopausal symptoms, as pointed out by the North American Menopause Society's position statement on the non-hormonal management of menopause [48]. In addition, the costs of medical consultations and medications represent most of the expenses in the treatment of these symptoms. As noted in other studies, most women who face climacteric-related symptoms remain without adequate treatment [49].

5 CONCLUSIONS

A large part of women face climacteric symptoms, which range from moderate to severe, and the psychological symptoms were the most intense, impairing sexual function. Many of these women, even those with major symptoms, do not seek medical advice, which suggests that the real impact of these symptoms may be underestimated if we only consider cases diagnosed in clinical settings. Other consequences are added, such as sleep disorders and weight gain, profoundly affecting quality of life and increasing the risk of chronic diseases. The symptoms reported include psychological and physical aspects, with the "depressive mood" being the most common. However, only a fraction of those affected receive treatment, and an even smaller number resort to paid health services, due to difficulty in accessing or non-existence of public services. Although we did not find women who resist treatment, the availability of effective non-hormonal treatment alternatives could significantly improve the management of these symptoms.

TAXPAYERS

Aécio Menezes Nogueira reviewed the literature, wrote the manuscript, contributed to the interpretation of the data, and prepared the tables and figures.

Pedro Henrique Nogueira de Souza contributed with the conception and design and translation. Edemilson Antunes de Campos contributed with the conception and project.

Claudinalle Farias Queiroz de Souza contributed to the conception, design and financing of the publication.

Aurélio Molina da Costa reviewed the final version for important intellectual content, assisted in the writing of the manuscript and approved the final version to be submitted.

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The study followed appropriate ethical standards, including approval by two Ethics Committees, one from the University of Pernambuco and the other from the National Committee.

PROVENANCE AND PEER REVIEW

This article was not commissioned and has been externally peer-reviewed.

RESEARCH DATA (DATA SHARING AND COLLABORATION)

The research datasets linked to this article strictly complied with the legality recommended by the research ethics committees.

CONFLICTING DECLARATION OF INTEREST

All authors declare that they have no competing interests.

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APPENDIX A. SUPPLEMENTARY DATA

Additional data to this article can be requested by e-mail.

STATEMENT OF USE OF AI IN THE WRITING PROCESS

During the preparation of this work, the authors used OpenAI's ChatGPT-4 for text proofreading and readability enhancement. After using this tool/service, authors have reviewed and edited the content as needed and take full responsibility for the content of the publication.

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