Association of Climacteric and Vasomotor Symptoms with Quality of Life in Postmenopausal Women

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ABSTRACT

Background: Menopause is associated with various symptoms, including climacteric and vasomotor symptoms, which may impact the quality of life in postmenopausal women.

Objective: The study aimed to determine the association between climacteric and vasomotor symptoms with quality of life in postmenopausal women, and to explore the influence of BMI and the number of children on this relationship.

Methods: This cross-sectional analytical study included 368 postmenopausal women aged 40-55 years, selected through non-probability convenient sampling from DHQ Hospital Mianwali. Data were collected using the Menopause Rating Scale (MRS), Hot Flash Related Interference Scale (HFRDIS), and Menopause-Specific Quality of Life (MENQOL) questionnaire. Descriptive statistics and Pearson's correlation were used for analysis via SPSS version 25, with statistical significance set at p < 0.05.

Results: The study found no significant correlation between climacteric symptoms and quality of life (r = 0.076, p = 0.148) or vasomotor symptoms and quality of life (r = -0.28, p = 0.591). However, a significant negative correlation was observed between BMI and quality of life (r = -1.70, p = 0.001), and the number of children and quality of life (r = -0.102, p = 0.05).

Conclusion: Climacteric and vasomotor symptoms were not associated with quality of life, but higher BMI and more children negatively impacted quality of life in postmenopausal women.

INTRODUCTION

Menopause is a complex physiological and psychological transition marked by the cessation of menstruation, signaling the end of ovarian follicle activity and a significant reduction in estradiol production, the most biologically active form of estrogen. This hormonal shift, which involves a decrease in estradiol and an increase in follicle-stimulating hormone (FSH) and inhibin levels, often results in a range of symptoms that can severely affect a woman's quality of life (1, 2). The symptoms commonly associated with menopause, such as hot flashes, night sweats, urogenital discomfort, sleep disturbances, and mood fluctuations, are primarily attributed to the decline in estrogen levels. These symptoms not only contribute to physical discomfort but are also linked to a worsened cardiometabolic profile in affected individuals compared to those without menopausal symptoms (3, 4).

The decrease in estrogen, particularly estradiol, plays a crucial role in the onset of sexual dysfunction and other health issues during the menopausal transition. Postmenopausal women are at increased risk for a variety of conditions, including cardiovascular disease, musculoskeletal disorders, certain cancers, dementia, diabetes, metabolic syndrome, depression, and vasomotor symptoms such as hot flashes and night sweats (5). These vasomotor symptoms, characterized by sudden episodes of heat, redness, and sweating, particularly affect the upper body and are commonly experienced by women during menopause. Despite the prevalence of these symptoms, their duration can vary significantly, with some women experiencing them for decades, typically beginning in the early menopausal transition and lasting an average of 7 to 10 years (6, 7).

The symptoms of menopause, particularly vasomotor and climacteric symptoms like hot flashes, irritability, depression, and sleep disturbances, have a profound impact on women's quality of life. These symptoms, often triggered by insufficient estrogen, can worsen over time, leading to a significant decline in the ability to perform daily activities and negatively affecting overall well-being (8). Research across various fields, including medical and social sciences, has increasingly focused on the relationship between these psychosomatic symptoms and the quality of life in women undergoing menopause, utilizing specific scored methods to assess their impact (9). However, most studies have primarily explored the effects of treatments like hormone therapy on menopausal symptoms, with limited research examining the direct relationship between these symptoms and quality of life, especially concerning socio-demographic factors (10, 11).

Given the significant impact of menopause on women's health, it is critical to understand how climacteric and vasomotor symptoms influence quality of life. This study seeks to address this gap by investigating the association between these symptoms and the quality of life in

postmenopausal women, considering the broader socio-demographic factors that may also play a role. By exploring these relationships, this research aims to provide a deeper understanding of the challenges faced by menopausal women and to highlight areas where targeted interventions could improve their overall well-being (12).

MATERIAL AND METHODS

This study employed a cross-sectional analytical design, targeting a sample size of 368 postmenopausal women, calculated using the Raosoft sample size calculator based on a 42% prevalence of hot flashes reported in previous research (15). The participants were recruited using a non-probability convenient sampling technique from the gynecology department of DHQ Hospital, Mianwali. The study was conducted over one year following approval from the research ethics board. Inclusion criteria were women aged 40 to 55 years who had experienced spontaneous menopause at least 12 months prior to the study. Exclusion criteria included women with severe endocrine or metabolic diseases, those with hypertension on medications such as sedatives or antidepressants, and those with cognitive impairments.

Data collection involved administering standardized questionnaires, including the Menopause Rating Scale (MRS) for climacteric symptoms, the Hot Flash Related Interference Scale (HFRDIS) for vasomotor symptoms, and the Menopause-Specific Quality of Life (MENQOL) questionnaire. The MRS consists of 11 items that assess various symptoms associated with menopause, with respondents indicating their severity on a five-point scale. The HFRDIS evaluates the impact of hot flashes on daily activities, asking participants to rate the level of interference on a scale from 0 to 10, with higher scores indicating greater disruption to quality of life. The MENQOL is a self-administered questionnaire with 29 items, each rated on a scale of zero to six, covering four domains: vasomotor, psychosocial, physical, and sexual. The scores for each domain were calculated by summing the item scores and dividing by the number of items in that domain (16-19).

Before data collection, ethical approval was obtained from the institutional review board, ensuring the study adhered to the principles outlined in the Declaration of Helsinki. A permission letter was also secured from DHQ Hospital Mianwali. Participants were informed about the study's objectives, and written consent was obtained from all participants. The data was collected between June and August 2022. Participants completed the questionnaires in a structured format, and efforts were made to ensure that they fully understood the questions and their role in the study.

The collected data was analyzed using IBM SPSS Statistics version 25. Descriptive statistics were calculated for qualitative variables, including frequency distributions and percentages, while quantitative variables were summarized using means, standard deviations, and ranges. Pearson's correlation was used to assess the relationships between climacteric and vasomotor symptoms, body mass index (BMI), the number of children, and quality of life. Statistical significance was set at a p-value of less than 0.05. The analysis aimed to identify any significant correlations between menopausal symptoms and the quality of life of the participants, with specific attention to the influence of BMI and the number of children on these outcomes.

RESULTS

A total of 368 postmenopausal women participated in the study. The majority of the respondents were from the middle class (77.7%), with a smaller proportion from the lower class (17.1%) and upper class (5.2%). The distribution of Body Mass Index (BMI) among the participants revealed that 7.1% were underweight, 24.2% had a normal BMI, and 68.8% were overweight or obese. The details of socioeconomic status and BMI distribution are presented in

Table 1: Frequency Distribution of Socioeconomic Status and Body Mass Index (BMI)

Category	Frequency (n)	Percentage (%)
Socioeconomic Status		
Upper class	19	5.2%
Middle class	286	77.7%
Lower class	63	17.1%
Body Mass Index (BMI)		
Underweight	26	7.1%
Normal weight	89	24.2%
Overweight/Obese	253	68.8%

The mean score for the Menopause Rating Scale (MRS) was 19.03 ± 4.88, indicating the general severity of menopausal symptoms among the study population. The mean score for the Hot Flash Interference Scale was 18.86 ± 2.43, reflecting the degree of disruption hot flashes caused to daily activities.

Table 2: Descriptive Statistics of Menopause Rating Scale (MRS), Hot Flash Interference Scale, and MENQOL

Scale	Mean ± SD
Menopause Rating Scale (MRS)	19.03 ± 4.88
Hot Flash Interference Scale	18.86 ± 2.43
MENQOL Total Mean Score	1.16 ± 0.84

The mean score for the Menopause-Specific Quality of Life (MENQOL) was 1.16 ± 0.84, indicating the overall impact of menopausal symptoms on the quality of life.

The descriptive statistics for these scales are summarized in Table 2. To examine the associations between menopausal symptoms and quality of life, Pearson's correlation analysis was conducted. The correlation between climacteric symptoms and quality of life was not statistically significant (r = 0.076, p = 0.148). Similarly, the correlation between vasomotor symptoms and quality of life was also non-significant (r = -0.28, p = 0.591). However, a significant negative correlation was observed between BMI and quality of life (r = -1.70, p = 0.001), indicating that higher BMI was associated with a lower quality of life. Additionally, a statistically significant negative correlation was found between the number of children and quality of life (r = -0.102, p = 0.05). These findings are detailed in Table 3.

Table 3: Correlation Between Climacteric Changes, Vasomotor Changes, BMI, and Quality of Life

Variable	Correlation Coefficient (r)	p-value
Climacteric Changes * Quality of Life	0.076	0.148
Vasomotor Changes * Quality of Life	-0.28	0.591
BMI * Quality of Life	-1.70	0.001
Number of Children * Quality of Life	-0.102	0.05

These results suggest that while climacteric and vasomotor symptoms do not have a significant association with the quality of life in postmenopausal women, BMI and the number of children do play a significant role in influencing their quality of life.

DISCUSSION

This study aimed to explore the association between climacteric and vasomotor symptoms with the quality of life in postmenopausal women, while also examining the influence of body mass index (BMI) and the number of children on quality of life. The findings indicated that climacteric and vasomotor symptoms were not significantly associated with quality of life, contrary to some existing literature. However, BMI and the number of children showed significant negative correlations with quality of life, highlighting the complex interplay of factors affecting postmenopausal women's well-being.

The lack of significant correlation between climacteric symptoms and quality of life aligns with previous studies, such as Blumel et al.'s research in Chile, which found no meaningful link between aging and quality of life (20). Similarly, studies by Senthilvel et al. and Van Dole et al. also failed to establish a significant relationship between menopausal symptoms and quality of life, particularly in the context of socio-demographic factors (21, 14). This suggests that while climacteric symptoms are prevalent, their direct impact on the overall quality of life may be less substantial than previously assumed. It is possible that the subjective experience of these symptoms varies greatly among women, with some adapting better than others, thus diminishing the overall statistical significance.

The study's finding that vasomotor symptoms, including hot flashes, did not significantly correlate with quality of life contrasts with some earlier studies, such as those by Pinkerton et al., which highlighted a significant impact of vasomotor symptoms on sleep quality and overall well-being (7). However, the discrepancy may be attributed to cultural, genetic, and lifestyle differences among populations, as well as varying definitions and measurements of quality of life across studies. It is also possible that the duration and intensity of vasomotor symptoms in the study population were not sufficient to cause a noticeable decline in quality of life.

The significant negative correlation between BMI and quality of life found in this study is consistent with findings from Yanikkerem et al., who reported that obese women experience more severe vasomotor and somatic complaints compared to those with normal BMI (18). Obesity is a well-documented risk factor for various health conditions, including cardiovascular diseases, diabetes, and metabolic syndrome, all of which can further deteriorate the quality of life in postmenopausal women. The results of this study underscore the importance of maintaining a healthy BMI to mitigate the negative impacts on quality of life during menopause.

The significant correlation between the number of children and quality of life also aligns with previous research, which suggests that having more children can increase stress and financial burdens, thereby reducing quality of life (22). The additional responsibilities associated with a larger family may limit personal time and resources, contributing to decreased well-being. These findings highlight the need for targeted interventions that address the specific challenges faced by women with larger families during the menopausal transition.

Despite the valuable insights gained, this study had certain limitations. The cross-sectional design limited the ability to establish causality between menopausal symptoms and quality of life. Additionally, the study was conducted in a specific geographical region, which may limit the generalizability of the findings to other populations with different cultural, social, and economic contexts. Furthermore, the reliance on self-reported questionnaires may have introduced bias, as participants' perceptions of their symptoms and quality of life could be influenced by various subjective factors.

Future research should consider longitudinal studies to better understand the temporal relationships between menopausal symptoms and quality of life. Incorporating qualitative methods could also provide deeper insights into the personal experiences of postmenopausal women, which quantitative tools may not fully capture. Moreover, there is a need for more research on the impact of

interventions, such as lifestyle modifications and targeted therapies, on improving quality of life in postmenopausal women.

CONCLUSION

In conclusion, while climacteric and vasomotor symptoms were not directly associated with quality of life in this study, BMI and the number of children were significant factors influencing well-being in postmenopausal women. These findings suggest that addressing obesity and providing support to women with larger families could be crucial strategies in enhancing the quality of life during the menopausal transition. Healthcare providers should focus on holistic approaches that consider both physical and socio-demographic factors when designing interventions to improve the well-being of postmenopausal women.

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