RESEARCH PAPER

# Assessment Of Psychological Climacteric Symptoms Among Post Menopausal Women.

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**ABSTRACT**
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## INTRODUCTION

Menopause is a significant physiological and psychological event in a woman's life marked by the permanent amenorrhea after declining ovarian activity and estrogen levels [1]. Menopause is found to happen at 45.5 ± 5.5 years in India, but it varies due to genetic, environmental, and socio-cultural factors [2]. As women live well into their 80s, the postmenopausal period constitutes a large part of their lives, and the management of menopausal symptoms, especially psychological, is paramount for quality of life [3].

The climacteric syndrome consists of a constellation of symptoms concerning physical, vasomotor, psychological, and cognitive well-being [4]. Psychological symptoms of depression, anxiety, mood swings, irritability, and sleep disturbances profoundly impact daily functioning [5]. It has also been demonstrated that 20–40% of postmenopausal women experience psychological distress, with higher prevalence in urban groups where lifestyle stressors, social isolation, and economic pressures are more intense [6]. These consequences are largely the result of estrogen's action on neurotransmitters like serotonin and norepinephrine, which regulate mood and cognition [7]. The abrupt decline in estrogen can lead to symptoms of depression as well as cognitive impairment like loss of memory and poor concentration [8]. Menopausal endocrine changes may also exacerbate pre-existing psychiatric illness, making management more difficult [9]. Socioeconomic and lifestyle variables also contribute to psychological distress—socially well-supported women and those who are more financially secure have less distress, and economically disadvantaged women and those who are socially isolated are at greater risk for mood disorders [10]. Urbanization contributes further insults in the form of sedentary lifestyle, poor diet, and exposure to environmental toxins, with resultant heightened psychological morbidity [11].

Despite the high prevalence of symptoms, underdiagnosis and undertreatment are a problem, in part due to normalization of mood symptoms and stigma of mental illness [12]. In the Indian setting, cultural attitudes minimize psychological distress as a natural process of aging, with resultant delays in seeking medical consultation [13]. A multimodal approach, including hormonal therapy, pharmacological treatment, psychosocial therapy, and lifestyle modification, has been shown to be most effective in the treatment of menopausal symptoms [14]. Non-pharmacological treatments like cognitive-behavioral therapy, diet, and exercise have been effective in alleviating depression and anxiety [15].

Standardized screening instruments like the Green Climacteric Scale and early detection facilitate systematic evaluation of menopausal symptoms and allow early intervention [16]. However, research on the psychological effects of menopause in India is limited, pointing toward a gap in knowledge [17]. It is the intention of this study to bridge this gap by the assessment of the prevalence, severity, and demographic correlations of psychological symptoms according to a prospective observational study [18]. This study considers factors like age, socioeconomic status, and lifestyle attributes in determining menopausal distress [19].

A multidisciplinary approach including endocrinology, psychiatry, and social sciences is necessary in addressing the dilemma of postmenopausal women [20-25]. There is evidence that chronic stress, lack of social support, and comorbidities worsen psychological distress, and targeted screening and intervention are thus required [21]. The bidirectional nature of vasomotor symptoms and sleep disturbance further complicates mood disorders, and meticulous assessment and management are needed [22, 23]. By identifying key risk factors and providing empirical evidence, the current study aims to inform clinical practice and public health policy, and ultimately improve the quality of life for postmenopausal women [26-30].

## METHODOLOGY

### Study Design and Setting

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This prospective observational study assessed psychological climacteric symptoms among postmenopausal women in a natural clinical environment without experimental intervention. The research was conducted at Sree Balaji Medical College and Hospital, Chennai, during three months (October–December) with a representative sample of patients. Purposive sampling was utilized to recruit 96 participants calculated statistically for 95% confidence level. Data collection involved demographic, menstrual, and obstetric history, physical and psychological assessment on the Green Climacteric Scale. Key parameters such as BMI, blood pressure, depression, anxiety, irritability, and sleep disturbances were assessed methodically to provide a comprehensive health profile.

**Inclusion Criteria:**

- Women who had attained natural menopause at least 2 years prior to enrollment.
- Participants who were willing to provide informed consent after understanding the study objectives.
- Individuals who attended the Sree Balaji Medical College and Hospital during the study period.

**Exclusion Criteria:**

- Women who experienced postmenopausal bleeding.
- Individuals who had undergone hysterectomy or were on radiotherapy and chemotherapy.
- Participants with any severe psychiatric or neurological disorders that could confound the assessment of psychological symptoms.

The process of research began with approval from hospital authorities and the Institutional Ethical Committee. The participants were recruited during outpatient visits, counseled for the study, and written consent was taken. Interview and physical examination were conducted using a standardized 21-question proforma to identify clinical and psychological determinants. Data were gathered sequentially, and information was documented and transferred to a secure electronic database. Accuracy was assured through frequent review and cross-validation by the research team, with senior clinicians being in charge of the process to guarantee consistency, confidentiality, and quality assurance.

**Data Analysis**: Data analysis was performed using appropriate statistical software packages. Initially, descriptive statistics were computed to summarize the demographic and clinical characteristics of the participants. Measures such as means, medians, and standard deviations were calculated for continuous variables, while frequencies and percentages were used for categorical data. Inferential statistics, including chi-square tests and t-tests, were applied to determine the significance of associations between psychological symptoms and various demographic or clinical factors. The analysis was carried out in a step-by-step manner, and all statistical tests were conducted at a 95% confidence interval. The findings were interpreted in the context of existing literature, and any observed associations were discussed in relation to their clinical relevance.

## RESULTS

A total of 96 postmenopausal women were enrolled in the study. The participants' demographic characteristics, menopausal history, physical parameters, and psychological profiles were systematically recorded. The data were subsequently analyzed to explore associations between various demographic and clinical parameters and the psychological symptoms as measured by the Green Climacteric Scale.

The participants had a mean age of $56.2 \pm 5.8$ years. The majority were married, with a varied distribution in socioeconomic status and educational background. These demographic details are summarized in Table 1.

**Table 1. Demographic Characteristics of Participants (n = 96)**

| Variable | Category | Frequency (n) | Percentage (%) |
|---|---|---|---|
| Age Group (years) | 40–50 | 20 | 20.8 |
| | 51–60 | 50 | 52.1 |
| | >60 | 26 | 27.1 |
| Marital Status | Married | 85 | 88.5 |
| | Widowed/Divorced | 11 | 11.5 |
| Socioeconomic Status | Low | 40 | 41.7 |
| | Middle | 38 | 39.6 |
| | High | 18 | 18.7 |
| Education | Primary | 25 | 26.0 |
| | Secondary | 45 | 46.9 |
| | Graduate & Above | 26 | 27.1 |

Table 2 details the menopausal history of the participants. The mean age at menopause was $47.3 \pm 3.1$ years, and the average duration since menopause was $8.9 \pm 4.3$ years. The majority of the participants were multiparous

**Table 2. Menopausal and Obstetric History**

| Variable | Mean ± SD / Frequency | Unit/Category |
|---|---|---|
| Age at Menopause | 47.3 ± 3.1 | Years |
| Years Since Menopause | 8.9 ± 4.3 | Years |
| Parity | 3.4 ± 1.2 | Number of children |
| History of Abortion | 18 | Yes (n = 18) / No (n = 78) |

The physical evaluation revealed a mean Body Mass Index (BMI) of 26.3 ± 3.5 kg/m². Blood pressure readings were within acceptable ranges for most participants. Detailed distributions of BMI and blood pressure categories are provided in Table 3.

**Table 3. Physical Parameters**

| Parameter | Category | Frequency (n) | Percentage (%) | Mean ± SD |
|---|---|---|---|---|
| BMI | Normal (18.5–24.9) | 35 | 36.5 | – |
| | Overweight (25–29.9) | 45 | 46.9 | – |
| | Obese (≥30) | 16 | 16.7 | – |
| Systolic BP (mmHg) | – | – | – | 130 ± 12 |
| Diastolic BP (mmHg) | – | – | – | 80 ± 8 |

The psychological assessment revealed that a significant proportion of participants experienced symptoms of depression, anxiety, irritability, and sleep disturbances. Table 4 displays the distribution of these symptoms as per severity.

**Table 4. Prevalence of Psychological Symptoms (Green Climacteric Scale)**

| Symptom | None (n, %) | Mild (n, %) | Moderate (n, %) | Severe (n, %) |
|---|---|---|---|---|
| Depression | 16 (16.7) | 40 (41.7) | 30 (31.3) | 10 (10.4) |
| Anxiety | 18 (18.8) | 38 (39.6) | 28 (29.2) | 12 (12.5) |
| Irritability | 20 (20.8) | 42 (43.8) | 25 (26.0) | 9 (9.4) |
| Sleep Disturbance | 22 (22.9) | 35 (36.5) | 25 (26.0) | 14 (14.6) |

An analysis of the association between socioeconomic status (SES) and the overall psychological symptom score showed that participants in the low SES group had higher mean scores compared to those in the middle and high groups. This table provides the mean psychological symptom scores for each SES category. (Table 5)

**Table 5. Association Between Socioeconomic Status and Psychological Symptom Scores**

| Socioeconomic Status | Mean Psychological Score ± SD | p-value |
|---|---|---|
| Low | 28.4 ± 5.2 | 0.02* |
| Middle | 25.1 ± 4.8 | |
| High | 23.5 ± 4.3 | |

*Statistically significant at $p < 0.05$.

The mean psychological symptom scores varied significantly by age group. Participants aged over 60 years exhibited the highest scores, suggesting an increase in psychological symptom burden with advancing age. (Table 6)

**Table 6. Distribution of Psychological Symptom Scores by Age Group**

| Age Group (years) | Mean Score ± SD | p-value |
|---|---|---|
| 40–50 | 25.3 ± 4.2 | 0.03* |
| 51–60 | 27.5 ± 5.0 | |
| >60 | 29.1 ± 5.3 | |

*Statistically significant at $p < 0.05$.

Sleep disturbances were one of the most commonly reported symptoms. Table 7 summarizes the prevalence and severity of sleep disturbances among the participants.

**Table 7. Prevalence and Severity of Sleep Disturbances**

| Sleep Disturbance Category | Frequency (n) | Percentage (%) |
|---|---|---|
| None | 30 | 31.3 |
| Mild | 35 | 36.5 |
| Moderate | 20 | 20.8 |
| Severe | 11 | 11.5 |

Vasomotor symptoms, such as hot flushes and night sweats, were also recorded. The frequency distribution of these symptoms is shown in Table 8.

**Table 8. Frequency Distribution of Vasomotor Symptoms**

| Vasomotor Symptom | Yes (n, %) | No (n, %) |
|---|---|---|
| Hot Flushes | 55 (57.3) | 41 (42.7) |
| Night Sweats | 50 (52.1) | 46 (47.9) |
| Breast Tenderness | 35 (36.5) | 61 (63.5) |

A cross-tabulation analysis was performed to assess the relationship between psychological symptom presence and BMI category. Participants with overweight or obesity were more likely to report higher levels of psychological distress. (Table 9)

**Table 9. Cross-Tabulation of Psychological Symptoms and BMI Status**

| Psychological Symptom | Normal BMI (n=35) | Overweight/Obese (n=61) | Total (n) |
|---|---|---|---|
| Present | 18 (51.4%) | 40 (65.6%) | 58 (60.4%) |
| Absent | 17 (48.6%) | 21 (34.4%) | 38 (39.6%) |
| Total | 35 (100%) | 61 (100%) | 96 (100%) |

A multivariate regression analysis was conducted to determine the factors that were significantly associated with high psychological symptom scores. Variables such as age, socioeconomic status, years since menopause, and BMI were included in the model. (Table 10)

**Table 10. Multivariate Regression Analysis of Factors Associated with High Psychological Symptom Scores**

| Variable | Beta Coefficient (β) | Standard Error | p-value | 95% Confidence Interval |
|---|---|---|---|---|
| Age | 0.32 | 0.12 | 0.008* | 0.08 to 0.56 |
| Low Socioeconomic Status | 1.85 | 0.75 | 0.015* | 0.35 to 3.35 |
| Years Since Menopause | 0.28 | 0.10 | 0.005* | 0.08 to 0.48 |
| BMI | 0.20 | 0.09 | 0.032* | 0.02 to 0.38 |
| Educational Level | -0.15 | 0.11 | 0.17 | -0.37 to 0.07 |

*Statistically significant at $p < 0.05$.

## DISCUSSION

The aim of this study was to assess psychological climacteric symptoms in postmenopausal women and identify associated demographic and clinical factors. The mean age of the women was 56.2 years, and the majority (52.1%) were aged 51–60 years, whereas 27.1% were more than 60 years. Most (88.5%) were married, and socioeconomic status was 41.7% in the low, 39.6% in the middle, and 18.7% in the high category. Educational level ranged from primary (26.0%) to secondary (46.9%) and graduate or higher (27.1%). Age at menopause was, on average, 47.3 years, and postmenopausal duration was, on average, 8.9 years. Obstetric history demonstrated a parity of 3.4 on average, with 18 abortion cases, complicating the psychological assessment.Physical examination demonstrated an average BMI of 26.3 kg/m², with 46.9% being overweight and 16.7% being obese. Blood pressure levels were within the normal range, which revealed that cardiovascular problems were not major predictors of psychological distress. Psychological assessment revealed that 41.7% of women were mildly depressed, 31.3% moderately, and 10.4% severely depressed. Anxiety was also equally distributed, as 39.6% were mildly, 29.2% moderately, and 12.5% severely symptomatic. Irritability and sleep disturbance also showed the same trend, revealing a high degree of psychological distress in postmenopausal women.There was a significant relationship between socioeconomic status and psychological symptoms since women in the low-income group were more distressed (mean score: 28.4) than in middle (25.1) and high (23.5) socioeconomic groups ($p = 0.02$). The distress levels were influenced by age since the mean psychological scores increased from 25.3 in the 40–50 years range to 27.5 in 51–60 years and 29.1 in those aged over 60 ($p = 0.03$). Sleep disturbance was widely noticed, with 68.7% with varying degrees of severity, pointing toward its impact on overall well-being.Vasomotor symptoms such as hot flushes (57.3%) and night sweats (52.1%) were common, as was breast tenderness (36.5%), showing that physical discomfort can contribute to psychological distress. Obesity was also linked with more distress, with 65.6% of overweight/obese women having psychological symptoms compared to 51.4% with normal BMI, showing the interconnectedness of physical and mental health in menopause.Multiple regression analysis identified the significant predictors of psychological distress as age ($\beta = 0.32$, $p = 0.008$), low socioeconomic status ($\beta = 1.85$, $p = 0.015$), menopause years ($\beta = 0.28$, $p = 0.005$), and BMI ($\beta = 0.20$, $p = 0.032$). Educational status was not significant

($\beta = -0.15$, $p = 0.17$). These findings refer to the interplay of intrinsic factors like age and hormonal status with extrinsic ones like economic status and body weight.The results are in agreement with previous reports of high rates of depression, anxiety, and sleep disorder in postmenopausal women, particularly in those with lower socioeconomic status and higher BMI. The trend for increasing psychological distress with age is explicable in terms of cumulative stressors and prolonged estrogen deficiency, while socioeconomic disparities point to financial security and social support. The link with obesity is consistent with emerging evidence on the effects of metabolic change on mood regulation.Although the research was robust, weaknesses included the cross-sectional design, which restricts causal inferences, and reliance on self-report information, a potential source of bias. The Green Climacteric Scale was revealing but may not have been sensitive to the severity of psychological illness. However, the systematic structure of the research, the representative nature of the sample, and the rigorous statistical analysis are fundamental strengths that make important contributions to knowledge regarding psychological well-being in postmenopausal women and invite targeted interventions based on both biological and socioeconomic factors.

## CONCLUSION

In conclusion, the study demonstrated that psychological climacteric symptoms are highly prevalent among postmenopausal women, with significant associations observed with age, low socioeconomic status, increased duration since menopause, and higher BMI. These findings underscore the need for integrated healthcare strategies that address both the physical and mental health needs of postmenopausal women. Future research should aim to explore longitudinal changes in psychological symptoms and evaluate the effectiveness of targeted interventions designed to alleviate these symptoms, thereby improving quality of life and overall well-being in this vulnerable population.

**Conflict Of Interest**

No declared

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**Ethical Approval**

The study was approved by the institutional ethics committee.

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