

Analysis of the Relationship between Depressive Symptoms and Quality of Life in Menopausal Women

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Abstract

Aim: The present study evaluates depressive symptom levels in menopausal women and examines their impact on physical, psychological, and social quality of life. **Methods:** This cross-sectional study was conducted in a secondary-level public hospital's gynecology and obstetrics clinic between January and June 2025. The hospital information management system retrospectively extracted diagnostic, treatment, and laboratory data. A researcher-developed questionnaire was administered to participants, and the research team subsequently classified the data. **Results:** Scores on the Hospital Anxiety and Depression Scale indicated that participants experienced mild levels of depression and anxiety. Menopausal Rating Scale results demonstrated that menopause had a modest effect on quality of life among the study population. Binary logistic regression analyses used 'university education' and 'housewife' as reference categories. Education was not significantly associated with survey scores. Occupation demonstrated significant effects. **Conclusion:** In summary, the findings suggest that menopause typically has a mild impact on quality of life, with education and occupation identified as significant determinants.

Keywords: Hospital Anxiety and Depression Scale, Menopausal Rating Scale, Quality of Life, Depressive Symptoms, Menopausal Women.

1. Introduction

Menopause is clinically defined as 12 consecutive months of amenorrhea without alternative etiologies. This transition represents a universal midlife event with biological, psychological, and social implications. Although menopause is a normative phase of reproductive aging, its progression and symptomatology exhibit substantial variability across individuals and cultural contexts. Contemporary staging systems, including the Stages of Reproductive Aging Workshop +10 (STRAW+10) standard, provide consistent terminology for the late reproductive stage, menopausal transition (early and late perimenopause), and early and late postmenopause. These frameworks enhance study comparability and facilitate precise clinical assessment ^{1,2}.

Substantial evidence demonstrates that the menopause transition is associated with increased vulnerability to depressive symptoms, with the highest risk observed during perimenopause. A 2024 meta-analysis of prospective cohorts reported significantly higher

odds of depressive symptoms and diagnoses in perimenopausal compared to premenopausal women (pooled OR $\approx$ 1.40) ³. A 2024 global meta-analysis further estimated that approximately one in three menopausal women meet criteria for depression on standardized instruments, highlighting considerable population burden and heterogeneity influenced by region and measurement approach ⁴. Longitudinal data from the Study of Women's Health Across the Nation (SWAN) indicate that risk patterns change after the final menstrual period, with postmenopausal risk remaining elevated, particularly among women who experienced high symptom levels prior to the final menstrual period ⁵. This finding highlights the importance of considering a life-course psychiatric history. Fluctuating estradiol, vasomotor symptoms, and sleep disruption are plausible mechanisms that interact with midlife psychosocial factors ⁶. Quality of life (QoL), encompassing physical, psychosocial, sexual, and role functioning, provides a comprehensive framework for assessing the broader impact of menopausal symptoms and mood disturbances. The Menopause-Specific Quality of Life (MENQOL) questionnaire is a widely used and validated tool for measuring domain-specific quality of life ⁷.

Recent community and clinic-based studies have identified a robust association between depressive symptoms and diminished quality of life during the menopausal transition, especially within psychosocial domains ⁸. Empirical evidence indicates that resilience and self-efficacy may attenuate these adverse outcomes. Epidemiological research also documents the sustained influence of vasomotor symptoms and their duration on quality of life. Distinct symptom trajectories correspond to declines in health-related quality of life throughout midlife ^{9,10}.

Despite recent advances, significant knowledge gaps remain. Reported prevalence rates of depression and associated quality-of-life outcomes vary according to study design, cultural context, symptom measurement, and staging criteria ^{3,4}. Longitudinal studies indicate that the menopausal transition itself exerts a limited direct effect on quality of life when accounting for symptoms and comorbidities. In contrast, depressive symptoms persist as a significant and potentially modifiable determinant of midlife experiences ¹¹. Clarifying the independent association between depressive symptom burden and quality of life, beyond the effects of vasomotor symptoms, sleep disturbance, and sociodemographic variables, is essential for informing screening priorities and integrated interventions in primary care ^{3,4,11}.

The present study evaluates depressive symptom levels in menopausal women and examines their impact on physical, psychological, and social quality of life using the Hospital Anxiety and Depression Scale (HADS) and the Menopausal Rating Scale (MRS). By applying established clinical staging and person-centered frameworks, this study investigates the relationship between depressive symptoms and quality of life. The central hypothesis posits that increased depressive symptoms are independently associated with lower quality of life, irrespective of menopausal stage or common confounders.

2. Material and Methods

2.1. Study Population

The study included patients presenting to the gynecology and obstetrics clinic with a diagnosis of menopause during the specified period. One hundred participants meeting criteria for natural or surgical menopause, defined as absence of menstruation for at least 12 months or bilateral oophorectomy, were enrolled. Sample size determination was performed using G*Power analysis.

2.2. Study Design

This cross-sectional study was conducted in the gynecology and obstetrics clinic of a secondary-level public hospital between January and June 2025. Women attending the

gynecology and obstetrics outpatient clinic between January and June 2025 were screened face-to-face for eligibility. Patients aged 45 years or older who met the criteria for natural menopause (absence of menstruation for at least 12 consecutive months) or surgical menopause (bilateral oophorectomy) were invited to participate. Those who fulfilled the inclusion criteria, had no exclusion criteria, and provided written informed consent were consecutively enrolled until a total of 100 participants was reached. Diagnostic, treatment, and laboratory data were retrospectively extracted from the hospital information management system. A researcher-developed questionnaire was administered to participants, and data were subsequently classified by the research team.

Participant Sociodemographic data collected included education level, marital status, age at menopause onset, and occupation, using a structured information form. Education was categorized as primary school, secondary school, high school, or university. Marital status was classified as married or single. Age at menopause onset was grouped as 45–50 years or over 50 years. Occupation was categorized as unemployed, public sector, or private sector.

2.3. The HADS Scale

Developed by Zigmond and Snaith ¹² and adapted to Turkish by Aydemir et al., ¹³ is used to assess anxiety and depression levels. The scale comprises 14 items, with seven items each for the anxiety (HADS-A) and depression (HADS-D) subscales. Each item is scored from 0 to 3, resulting in subscale scores ranging from 0 to 21. Higher scores reflect greater levels of anxiety or depression. The HADS-D subscale was utilized in this study.

2.4. The MRS Scale

Developed by Hauser et al. ¹⁴ and adapted for use in Turkey by Gurkan et al., ¹⁵ is an 11-item instrument designed to assess the severity of menopausal symptoms and quality of life in women. The scale includes three subscales: somatic (physical), psychological, and urogenital. Each item is rated from 0 to 4, with higher scores indicating more severe symptoms and reduced quality of life.

2.5. Exclusion Criteria

- Being under 45 years of age
- Not signing the informed consent form
- Not speaking or reading Turkish.
- Cognitive dysfunction or psychiatric diagnosis
- Hormone replacement therapy
- Active cancer treatment
- Those who refused to participate in the study.

2.6. Ethics

The respective institutional review boards of the research sites granted ethical approval. Participation in the study was entirely voluntary, and informed consent was obtained from the all participants. The study was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki throughout all stages of the research. Informed consent was obtained from the participants.

2.7. Statistical Analysis

The data were analyzed using the Statistical Package for the Social Sciences (SPSS) 23. Descriptive statistics were employed to summarize the clinical and demographic characteristics. The Shapiro–Wilk test was conducted to assess the normality of the data distribution. As the data did not meet the assumptions of normality, non-parametric tests were applied. Descriptive results are reported as means $\pm$ standard deviations. For comparisons between groups, the Mann–Whitney U test was utilized, depending on the distribution characteristics of the variables. To further examine the relationship between

sociodemographic factors and participants' survey scores, binary logistic regression analysis was conducted. The model's goodness-of-fit was evaluated using the Nagelkerke R-squared statistic, a modified version of the Cox and Snell R-squared, which ranges from 0 to 1. Higher Nagelkerke R-squared values indicate that the model accounts for a greater proportion of variance in the dependent variable, thus reflecting a better model fit. A p-value of less than 0.05 was considered statistically significant for all analyses.

3. Results

The minimum age among participants was 45 years. Of the total sample, 21 participants were university graduates and 76 were housewives. Table 1 presents the sociodemographic characteristics of the study population.

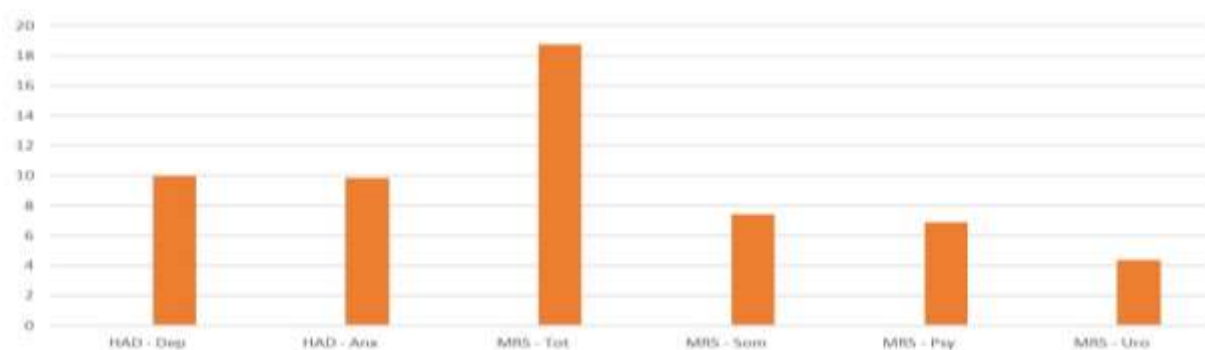
Table 1. Descriptive Statistics

		Frequency	%
Age	45 – 50	44	44.0
	> 50	56	56.0
Marital Status	Married	83	83.0
	Single	17	17.0
Education	Elementary School	36	36.0
	Middle School	10	10.0
	High School	33	33.0
	University	21	21.0
Occupation	Housewife	76	76.0
	Public Sector	12	12.0
	Private Sector	12	12.0

Scores on the HADS indicated that participants experienced mild levels of depression and anxiety. MRS results demonstrated that menopause had a modest effect on quality of life among the study population (Table 2, Graphic 1).

Table 2. Participants' average scores from the surveys

	n	Mean±SD
HAD - Depression	100	9.98 ± 3.71
HAD - Anxiety		9.82 ± 4.30
MRS - Total		18.73 ± 8.23
MRS - Somatic		7.42 ± 3.43
MRS - Psychological		6.90 ± 3.50
MRS - Urogenital		4.39 ± 2.73



Graphic 1. HAD - MRS averages

Questionnaire scores were analyzed by age, marital status, education, and occupation. Age was significantly associated only with MRS-Somatic scores. Marital status was not significantly related to questionnaire outcomes. Significant differences in HAD Depression, MRS-Total, MRS-Somatic, and MRS-Psychological scores were observed based on education and occupation, particularly between primary school and university groups and between housewives and private sector workers (Table 3 - 4).

Table 3. Comparison of age groups based on survey scores.

Age	MRS-Som	t	df	p
		-2.282	96.925	.025

Table 4. Comparison of survey scores between the Education and Occupation groups.

		df	Mean Square	F	p
Education	Depression	3	59.149	4.770	.004
	MRS-Total		174.782	2.711	.049
	MRS-Som		46.535	4.351	.006
	MRS-Psyc		34.135	2.951	.037
Occupation	Depression	2	48.528	3.704	.028
	MRS_Total		309.563	4.927	.009
	MRS_Som		55.448	5.096	.008
	MRS_Psyc.		51.434	4.494	.014

Binary logistic regression analyses used 'university education' and 'housewife' as reference categories. Education was not significantly associated with survey scores. Occupation demonstrated significant effects: public and private sector workers had lower MRS Total scores than housewives, and public sector workers also had lower MRS Somatic scores (Table 5).

Table 5. Binary Logistic Regression.

		B	S.E.	Wald	df	p
MRS Total	Housewife			8.67	2	.013
	Public Sector	1.96	.79	6.11	1	.013
	Private Sector	2.44	1.05	5.34	1	.021
MRS Somatic	Public Sector	1.62	.78	4.25	1	.039

4. Discussion

The assessment of psychological well-being and quality of life using the HAD and MRS indicated mild depression and anxiety, with menopause exerting a modest impact on quality of life. Age was associated with higher somatic MRS scores, while both education and occupation correlated with depression, overall symptom, somatic, and psychological scores. In multivariate regression, occupation remained a significant predictor, particularly for somatic and total symptom domains, underscoring the influence of socioeconomic determinants on symptom perception.

The age-related increase in somatic scores is consistent with prior evidence that vasomotor and musculoskeletal complaints intensify with advancing age. For example, a multinational survey reported that hot flushes and somatic discomfort are more frequently perceived as burdensome among older postmenopausal cohorts¹⁶. However, our study did not identify similar differences in psychological or urogenital domains,

suggesting that cultural adaptation and normalization of menopausal changes may mitigate distress beyond physical symptoms.

Education and occupation were strong determinants of both depression and menopausal symptom scores. University graduates demonstrated significantly lower depression and somatic burden compared with women with only primary education. This observation aligns with the work of Karimi et al.¹⁷, who demonstrated that higher educational attainment enhances coping strategies and promotes health literacy, thereby mitigating menopausal distress. Similarly, occupation played a decisive role: women engaged in private or public sector employment had lower MRS scores compared with housewives. These findings corroborate evidence from Iran and India, where occupational engagement was linked to better psychological well-being and fewer reported menopausal complaints^{18,19}. Social participation, financial independence, and structured routines may function as protective factors against the psychological sequelae of menopause.

The absence of significant associations with marital status in our study is noteworthy. Although some investigations reported protective effects of marital support²⁰, others, including recent systematic reviews, have emphasized that family structure alone cannot account for variations in menopausal experiences. Instead, broader psychosocial and cultural determinants may be more critical²¹.

Cultural framing exerts a substantial influence on symptom perception. Anthropological studies highlight that Japanese women often describe “chilliness” rather than hot flashes, while Latin American women emphasize musculoskeletal complaints—demonstrating that local cultural narratives shape how bodily changes are reported¹. This perspective, known as “local biologies,” provides context for the mild-to-moderate scores in our cohort: symptoms may be normalized, underreported, or reframed as a natural part of aging rather than an illness.

Hormone replacement therapy (HRT) represents another critical dimension in this discourse. Contemporary guidelines affirm that HRT significantly improves health-related and general quality of life in women with severe menopausal symptoms²². Nevertheless, risks associated with breast, endometrial, and ovarian cancers remain well documented, as demonstrated by large-scale epidemiological studies²³. In addition, recent reports have highlighted disparities in HRT access, with women from lower socioeconomic and minority backgrounds less likely to be prescribed treatment²⁴. These inequities suggest that education and occupation not only shape symptom perception but may also determine access to evidence-based therapies.

Recent interventional studies reinforce the importance of education. For instance, a self-efficacy-based training program in Iran significantly improved menopausal quality of life scores and health literacy, highlighting the potential for non-pharmacological strategies¹⁸. Similarly, a lifestyle medicine-based educational intervention demonstrated beneficial effects on symptom management and behavioral health²⁵. Such findings resonate with our results, suggesting that education and occupation provide protective frameworks that empower women to adapt to menopausal transitions.

Finally, it is critical to situate these findings within the broader psychosocial context of the COVID-19 pandemic. A recent study demonstrated that knowledge, physical activity, and perceived happiness were independent predictors of menopausal quality of life during the pandemic²⁶. This highlights the importance of resilience factors beyond biological determinants, further validating the role of socioeconomic and cultural variables.

Several limitations should be acknowledged. First, the relatively small, single-center cohort limits generalizability. Second, cultural attitudes, lifestyle factors, and HRT use were not directly measured, although they likely influenced symptom reporting. Information on antidepressant use, smoking status, duration of menopause, chronic diseases, body mass index and income level was not collected. As these factors may influence the

outcomes of interest, their omission should be considered a limitation of the present study. Third, the cross-sectional design precludes causal inference. Longitudinal, multicenter studies incorporating diverse populations and interventional approaches are warranted to further elucidate the complex interplay between biological, psychological, and cultural factors that influence menopause.

5. Conclusion

In summary, the findings suggest that menopause typically has a mild impact on quality of life, with education and occupation identified as significant determinants. Advancing age is associated with an increase in somatic symptoms, whereas marital status appears to be less influential. These results support a biopsychosocial approach to clinical evaluation and management, underscoring the importance of considering cultural context, socioeconomic status, and access to interventions. Strategies that promote education, occupational engagement, and healthy lifestyle behaviors may facilitate improved adaptation and quality of life among postmenopausal women.

Ethical Statement: Ethical approvals were obtained from the ethics committee of the healthcare institution where the study was conducted. Compliance with the ethical principles of the Declaration of Helsinki was essential at every stage. No participants were forced to participate in the study.

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Data availability statement: The datasets generated and analyzed during the current study are not publicly available due to patient privacy restrictions but are available from the corresponding author on reasonable request.

Declaration of AI Use: During the preparation of this work the author used AI technologies in order to improve readability and correct spelling errors. After using this tool/service, the author(s) reviewed and edited the content as needed and take(s) full responsibility for the content of the published article.

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