

## Menopausal Symptoms and Quality of Life among Palestinian Women: A Cross-Sectional Study

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### ABSTRACT

**Background:** Natural menopause is associated with somatic, vasomotor, psychological, and sexual complaints that may affect women's quality of life (QOL). **Aims:** To determine the prevalence and severity of menopausal symptoms and their impact on QoL among Palestinian women visiting primary care centers. **Methods:** A cross-sectional study was conducted from November 2018 through March 2019. Convenience sampling was used to interview 380 women aged 45–60 years attending primary care centers in the West Bank city of Nablus. The Menopause Rating Scale (MRS) assessed the prevalence and severity of menopausal symptoms and QoL. Mean scores of menopausal categories were compared for different symptoms. Descriptive and analytical analyses were performed. The level of significance was set at  $P < 0.05$ . **Results:** The age of menopausal onset (12-month absence) was  $49.37 \pm 3$  years ( $N = 200$ ). The most prevalent symptoms were physical and mental exhaustion (86%), anxiety (85.5%), and irritability (85.3%). Only the prevalence of sleep problems was statistically different between the pre-, peri, and post-menopausal groups ( $P < 0.001$ ). The average MRS score was  $18.64 \pm 9.19$ , indicating severe symptoms and a low QoL. **Conclusion:** The physical and psychosocial problems experienced by Palestinian post-menopausal women negatively impacted their QoL. Therefore, all women approaching menopause should have access to supportive networks and preventive programs for a healthy transition.

**Keywords:** Menopause, Palestinian women, Menopause Rating Scale, Quality of life.

### INTRODUCTION

Menopause is a natural feature of womanhood reached in the fourth decade, usually between 45 and 55 [1–3]. Natural menopause occurs after cessation of menses for 12 consecutive months, for which no other reason could be found. The classification of menopause into three phases is conducted by the World Health Organization (WHO). Premenopause refers to the phase in a woman's reproductive life where she experiences regular menstrual periods during the preceding 12 months, perimenopause (irregular period in the last 12 months or having no menstrual period for more than three months but less than 12 months), and postmenopause (no menstrual for last 12 months or more) [1]. The age of onset of natural menopause is affected by a wide range of factors, with interpersonal variability. There is no universal consensus on the

factors that influence the age at which menopause occurs. Several factors have been identified as influencing the onset of menopause. These include age at menarche, gestational age, oral contraceptive pills, irregular menstrual cycle, number of pregnancies, body mass index, alcohol and tobacco use, physical activity, unilateral oophorectomy, serum lead levels, polyunsaturated fat use, socioeconomic status, and level of education [4, 5].

There are various symptoms of menopause, including physical, psychological, and emotional symptoms [6]. The main physical symptoms reported among Americans, Europeans, and Japanese women were hot flashes, sleep disturbance, night sweats, muscular discomfort, fatigue, joint pain, and headache [7]. Arab and Asian studies have found that post-menopausal women primarily complain of back, neck, headache, and muscle and joint

problems [8–11], negatively affecting their reported quality of life.

The WHO defines QoL as "the individual's perception of their position in life within the context of cultural and value systems in which they live and with their goals, expectations, standards, and concerns" [12]. Several large-scale studies have shown a correlation between menopausal symptoms and diminished quality of life. Lower quality of life was shown to be connected with psychological and vasomotor symptoms [13, 14]. For example, a higher proportion of women in the USA and Europe experienced moderate to severe vasomotor symptoms and sleep problems, negatively impacting their QoL [7].

Palestine lacks literature on this issue. Unpublished research has linked education, income, family support, and self-reported health status to symptom severity [15, 16]. During this period, women also lacked knowledge and professional consultants. Thus, this study aimed to assess the age of menopause onset among women visiting primary healthcare centers (PHC) in Nablus, a city in the northern West Bank, Palestine, and the distribution of symptoms and QoL during this crucial period.

## METHODS

A cross-sectional study was conducted on a sample of women aged 45 to 60 who accessed primary healthcare services in Nablus, a city in northern Palestine with an estimated population of 415,606. Based on 95% confidence and 5% error, the minimum sample size needed was 377, recruited conveniently between November 2018 and March 2019. Women aged 45–60 without medically or surgically induced menopause, without hormone replacement treatment, and not pregnant or lactating were eligible.

Participants completed an Arabic self-administered questionnaire after verbal consent. The sociodemographic and medical variables considered were age in years, body mass index (BMI), marital status (single, married, divorced, or a widow), educational level (primary, intermediate, high school or university education, and illiterate), employment status (working, retired or unemployed), parity (number of live births), tobacco use (never use, ex-smoker, current smoker), frequency of

exercise (20–30 minutes of physical activity; less than 3 times/week, 3–5 times/week, or more than 5 times/week), age at menopause and chronic diseases. Several studies have examined menopausal women's health-related quality of life using measures like the Menopause Rating Scale (MRS), validated and translated into several languages since its development in Germany in the 1990s [17, 18]. The reliability of the total score was 0.60, and the internal consistency Chronbach  $\alpha$  coefficient was 0.87. Based on a study by AlDughaither et al. in 2015 in Saudi Arabia, the Menopause Rating Scale (MRS) was used to measure women's QoL [11]. Permission to use the Arabic version of MRS was obtained by contacting the author responsible for its validation. The MRS consists of a total of eleven items, which are further categorized into three distinct subscales. These subscales include somatic symptoms, encompassing hot flashes, heartburn, insomnia, and muscle and joint pain; psychological symptoms, comprising depressed mood, irritability, anxiety, and physical and mental fatigue; and urogenital symptoms, including sexual issues, bladder problems, and vaginal dryness. Each item is rated on a scale of 0 (not present) to 4 (very severe). The total score of each subscale is the number of the subscale's item scores. The overall severity score is subsequently classified into four categories: absence or minimum presence of symptoms (0–3), mild symptoms (4–8), moderate symptoms (9–16), and severe symptoms ( $\geq 17$ ) [11].

## Statistical analysis

Descriptive analysis used numbers and frequencies for categorical variables and mean and SD for quantitative ones. Analyses of variance, the Student's t-test, and the Chi-square test were used to compare menopausal groups' prevalence, demographic, clinical, symptom distribution, and MRS scores. Multiple linear regressions examined MRS score variables. The results have been considered statistically significant, shown by a P-value below 0.05. The data analysis was conducted using SPSS, version 21.0.

## RESULTS

### *Sociodemographic and clinical characteristics*

380 Palestinian women between the ages of 45 and 60 were included in the study, with an average age of  $52.15 \pm 4.7.200$  (52.6%), post-menopausal. 290 (76%) females were overweight or obese, 86.6% were married, 6.1% were illiterate, 84.5% were homemakers, and 85.8% were multipara. 84.5% were non-smokers, and 67.4% exercised less than three times a week. 158 (41.5%) participants

had no common chronic illnesses. (Table 1) shows participants' sociodemographic and clinical characteristics by menopausal status. Menopause began at  $49.37 \pm 3$ . Smoking status ( $P= 0.012$ ) and exercise ( $P= 0.005$ ) were statistically linked with menopause onset. All other demographic and clinical characteristics were not.

**Table (1):** Sociodemographic and clinical characteristics of participants (n=380).

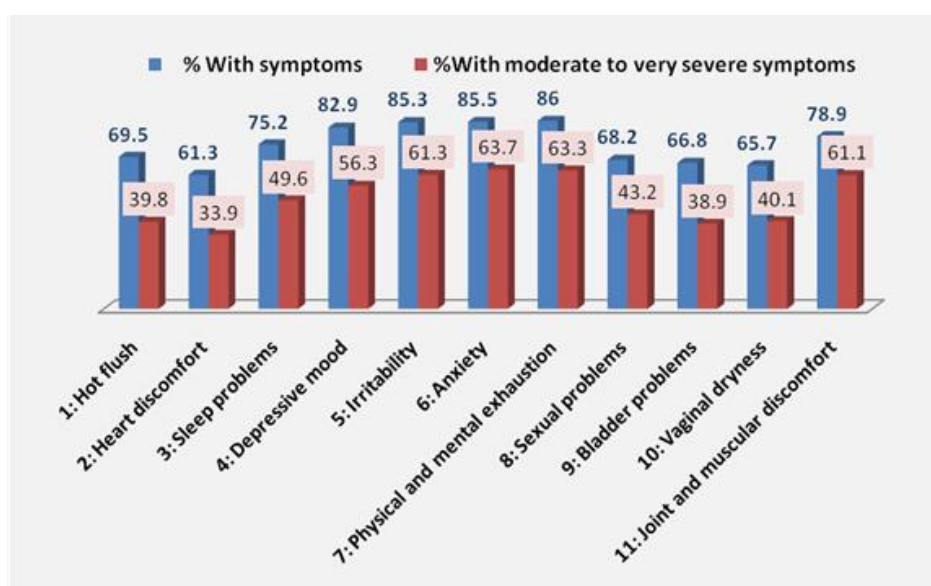
	Total (n,%)	Premeno-pause	Perimeno-pause	Postmeno-pause
<b>Frequency (%)</b>		<b>105 (27.6)</b>	<b>75(19.7)</b>	<b>200(52.6)</b>
<b>Age (mean <math>\pm</math> (SD))</b>	<b>52.15 <math>\pm</math> 4.7</b>	<b>49.2</b>	<b>4</b>	<b>49.37</b>
				<b>3</b>
				<b>54.75</b>
				<b>4</b>
<b>Marital status</b>				
Single	26 (6.8%)	9 (34.6%)	4 (15.4%)	13 (50%)
Married	329 (86.6%)	91 (27.7%)	63 (19.1%)	175 (53.2%)
Widow	16 (4.2 %)	3 (18.8%)	4 (25%)	9 (56.3%)
Divorced	9 (2.4 %)	2 (22.2%)	4 (44.4%)	3 (33.3%)
<b>Education</b>				
Illiterate	23 (6.1%)		7 (30.4%)	16 (69.6%)
Primary school	84 (22.1%)	23 (27.4%)	15 (17.9%)	46 (54.8%)
Intermediate school	92 (24.2%)	20 (21.7%)	16 (17.4%)	56 (60.9%)
High school	124 (32.6%)	39 (31.5%)	26 (21%)	59 (47.6%)
University	57 (15%)	23 (40.4%)	11 (19.3%)	23 (40.4%)
<b>Occupation</b>				
Housewife	321 (84.5%)	88 (27.4%)	62 (19.3%)	171 (53.3%)
Working	45 (11.8%)	14 (31.1%)	10 (22.2%)	21 (46.7%)
Retired	14 (3.7%)	3 (21.4%)	3 (21.4%)	8 (57.1%)
<b>Parity</b>				
Nullipara	54 (14.2%)	12 (22.2%)	11 (20.4%)	31 (51.8%)
Multipara	326 (85.8%)	93 (28.5%)	64 (19.6%)	169 (52.6%)
<b>Smoking status</b>				
Non-smoker	321 (84.5%)	83 (25.9%)	60 (18.7%)	178 (55.5%)
Previous smoker	32 (8.4%)	14 (43.8%)	5 (15.6%)	13 (40.6%)
Current smoker	27 (7.1%)	8 (29.6%)	10 (37%)	9 (33.3%)
<b>Exercises (times/ week)</b>				
< 3	256 (67.4%)	69 (27.0%)	54 (21.1%)	113 (52.0%)
3-5	99 (26.1%)	28 (28.3%)	21 (21.2%)	50 (50.5%)
>5	24 (6.3%)	8 (33.3%)	0 (0.0%)	16 (66.7%)
<b>Body Mass Index</b>				
Underweight and normal	90 (23.7%)	20 (22.2%)	14 (18.7%)	56 (62.2%)
Overweight	136 (35.8%)	33 (24.3%)	28 (20.6%)	75 (55.1%)
Obese	154 (40.5%)	52 (33.8%)	33 (21.4%)	69 (44.8%)
<b>Medical status</b>				
Diabetes mellitus	79 (20,7%)	16 (20.3%)	12 (15.2%)	51 (64.6%)
Hypertension	89 (23,4%)	19 (21.3%)	19 (21.3%)	51 (57.3%)

	Total (n,%)	Premeno- pause	Perimeno- pause	Postmeno- pause
Dyslipidemia	23 (6%)	8 (34.8%)	5 (21.7%)	10 (43.5%)
Others	21 (5,5%)	3 (14.3%)	7 (33.3%)	11 (52.4%)
Free	158 (41,5%)	58 (36.7%)	29 (18.4%)	71 (44.9%)

### Menopausal symptoms

According to the findings of the MRS, the three prevailing symptoms experienced during menopause were physical and mental exhaustion, anxiety, and irritability, with prevalence rates of 86%, 85.5%, and 85.3%, respectively, all psychological symptoms. Joint and muscular discomfort (78.9%) and sexual is-

sues (68.2%) topped the somatic and urogenital subscales (Figure 1). 20.2% and 16.0% of premenopausal and perimenopausal women experienced sleep problems, while 63.8% reported this symptom with significant differences ( $P < .001$ ). 24.3% of pre-and perimenopausal women and 58.4% of post-menopausal women had depressive moods ( $P = 0.038$ ). (Table 2) presents detailed results.



**Figure (1):** Prevalence of menopausal symptoms according to Menopause rating scale (n=380).

**Table (2):** Prevalence of menopausal symptoms according to MRS by menopausal status (n=380).

Subscale	Menstrual status (N,%)			P value
	Premenopause N=105	Perimenopause N=75	Postmenopause N=200	
Somatic				
Q1.Hot flashes	34 (32.7%)	28 (37.3%)	89 (44.5%)	.121
Q2.Palpitations	33 (31.4%)	28 (37.3%)	68 (34%)	.711
Q3.Sleep problems	38 (20.2%)	30 (16.0%)	120 (63.8%)	.000
Q11.Joint and muscle pain	105 (27.2%)	75(19.7)%	200 (52.6%)	.698
Psychological				
Q4.Depressive mood	52 (24.3%)	37 (17.3%)	125 (58.4%)	.038
Q5. Irritability	63 (27%)	42 (18.0%)	128 (54.9%)	.454
Q6. Anxiety	63 (26.0%)	43 (17.8%)	136 (56.2%)	.171
Q7. Fatigue	64 (26.7%)	46 (19.2%)	130 (54.2%)	.774
Urogenital				

Subscale	Menstrual status (N,%)			P value
	Premenopause N=105	Perimenopause N=75	Postmenopause N=200	
Q8. Sexual problems	37 (22.6%)	35 (21.3%)	92 (56.1%)	.156
Q9. Urinary symptoms	35 (23.6%)	28 (18.9%)	85 (57.4%)	.281
Q10. Vaginal symptoms	35 (23.0%)	28 (18.4%)	89 (58.6%)	.152

MRS: menopause rating scale.

### Quality of life using MRS

Quality of life decreases as the menopausal rating scale (MRS) score rises. The scoring system is divided into four distinct categories based on severity: mild (0-3), moderate (4-8), severe (9-16), and very severe (17-20). (Our sample analysis showed an average MRS score of  $18.64 \pm 9.19$ . 58.9% of overall scores are extremely severe, 26.8% severe, 10.5% moderate, and 3.7% mild. (Table 3) shows MRS mean total and subscale scores by menopausal category. The post-menopausal group had a higher mean total score ( $19.59 \pm 8.27$ ). Although all subscale

**Table (3):** Mean scores of MRS according to menopausal status.

Subscale	Menopausal status			P - value	Pre vs. post
	Pre (n=105)	Peri (n=75)	Post (n=200)	Pre vs. peri	
Somatic	5.83 $\pm$ 6.31	6.51 $\pm$ 3.59	6.73 $\pm$ 3.39	.569	.210
Psychological	7.59 $\pm$ 4.31	7.80 $\pm$ 4.56	8.54 $\pm$ 4.57	.949	.191
Urogenital	7.59 $\pm$ 4.31	7.80 $\pm$ 4.57	8.54 $\pm$ 4.57	.130	.045
<b>Total</b>	<b>16.83 <math>\pm</math> 10.41</b>	<b>18.64 <math>\pm</math> 9.44</b>	<b>19.59 <math>\pm</math> 8.27</b>	<b>.390</b>	<b>.034</b>

Results are presented as mean and  $\pm$ SD. P value is significant if  $< 0.05$

The MRS total score is inversely related to quality of life; therefore, physically active women have a job and a higher quality of life.

means were higher in post-menopausal women, only the urogenital subscale mean and overall mean scores were statistically significant ( $P = 0.045$  and  $P=0.034$ , respectively).

A linear regression model examined MRS scores and demographic and health characteristics. MRS scores were modeled against physical activity, employment, and live births. The multiple regression model excluded age, marital status, education level, BMI, smoking, and chronic disease history since they were not statistically significant in the bivariate analysis.

Menopausal women had higher MRS scores and lower quality of life than premenopausal women ( $\beta = 1.636$ ,  $P = .013$ ). The four-predictor model is shown in (Table 4).

**Table (4):** Results of linear regression model between mean MRS score for women and personal and health variables (N= 380)

Variable	Unadjusted $\beta$ (SD)	Adjusted $\beta$	p-value
Menopausal status (premenopause)	1.636	.153	0.013
Occupation (who does not work)	-3.3190	-1.74	0.002
Number of births (nullipara)	-3.190	-0.121	0.027
Exercise (who has limited exercise)	1.679	0.110	0.033
R <sup>2</sup>	Adjusted R <sup>2</sup>	F	p-value
0.077	0.050	2.798	0.002

R<sup>2</sup>: R squared or the coefficient of determination.  $\beta$ : standardized beta.

## DISCUSSION

This study examined the menopausal symptoms and health-related QoL of 45–60-year-old Palestinian women. The calculated mean age of menopause (for women with a 12-month absence or more; N= 200) was 49.37 3 years, within the international range of 44.6–55 years [19]. Saudi Arabia, Qatar, Egypt, Lebanon, and Jordan had similar outcomes [20].

Previous research showed that BMI [21], smoking [22], and live births [23] had been linked to menopause onset [23], but, in ours, smoking and exercise were the only variables that significantly affected menopause onset ( $P < .001$ ). Physical and mental exhaustion, anxiety, irritability, and depression were the most common symptoms, followed by joint and muscle stiffness from the somatic subscale. This matches research conducted in North America and Europe and in Asian and regional Arab communities like Turkey, South India, Southern Thailand, Egypt, Lebanon, and the UAE [24–30]. Similarly, an intercontinental review of menopause symptoms [31] reported that in South America, depression, sexual dysfunction and discomfort, muscle pain, and joint aches were the main complaints among menopausal women. In contrast, the classic menopausal symptoms, hot flashes, and night sweats were noted to be more prevalent in menopausal women in the United States and Australia, while sleep disorders were most prevalent among menopausal women in Africa.

Concerning sexual dysfunction, the area with the highest rate of this condition was Africa, where about 92% of women were affected. Similarly, Australia had a significant prevalence, with approximately 88% of women experiencing sexual dysfunction. In contrast, North America had the lowest incidence of these symptoms, with an average of around 32% of women affected [31]. Sociocultural, genetic, ethnic, and environmental factors may explain symptom disparities. Our findings can be explained by the fact that 67.4% exercised less than three times a week, even though it is well-known that physical activity can alleviate vasomotor symptoms by affecting the endocrine balance in the autonomic nervous system and stabilizing body

temperature [25, 32]. Additionally, the temporal aspect of data collecting during the winter months could influence it since there is a heightened prevalence of depression and other psychiatric disorders during this season [33]. It has been posited that psychological symptoms may be secondary to other symptoms or related to other causes, as they are not consistently associated with menopause in epidemiological studies [34].

Our study found that frequent exercise correlated with lower MRS scores, hence, better health-related QoL, which is consistent with the findings of a recent meta-analysis demonstrating the beneficial effects of exercise on quality of life [35] where there is widely known that engaging in physical exercise has been shown to decrease the physical, psychological, and vasomotor symptoms associated with menopause, where there is a consensus that physical activity reduces the physical, psychological, and vasomotor symptoms of menopause [25, 36, 37].

Compared to other groups, post-menopausal women reported a greater incidence of somatic, psychological, and urogenital complaints. Similar results were observed in studies undertaken in Iran [38], Ethiopia [39], and Nepal [40], in which post-menopausal women had significantly higher MRS scores on all subscales ( $P < .001$ ). The total and subscale MRS scores increased considerably with age and menopausal stage, according to the findings of these researches. These results can be related to variations in the quantities of hormones that become increasingly pronounced as women approach menopause, which occurs immediately after the cessation of estrogen production. In addition, social and psychological variables and unhealthy lifestyle choices increase the intensity of the symptoms. In contrast, a study among Lebanese women found that the perimenopausal phase [25] was the most symptomatic, which other researchers have attributed to the variation in hormone concentrations throughout this period [41].

Similar to the findings of other studies, it was found that the QoL decreased with the passage of menstrual status from premenstrual to perimenopausal to post-menopausal [42]. In addition, most respondents throughout all

stages of menopause had very severe symptoms (scores of 17 or higher) (N=224, 58.9%). This contrasts with earlier research in which subjects reported substantially less severe symptoms [43–45]. The effect of racial disparities on the prevalence and severity of menopausal symptoms can explain this disparity [38]. Also, this may be attributable to the confounding effect of other comorbidities or chronic diseases that can appear during this period and impact the generally reported QoL. In addition, this may imply inadequate adaptation to menopause symptoms by Palestinian menopausal women, resulting from a lack of knowledge about menopausal symptoms and coping mechanisms. In addition to specific targeted menopausal hormone therapy, therapeutic interventions such as partnership counseling and psychosocial support have been recommended to improve the QoL of menopausal women [46]. This study has certain drawbacks. First, the study sample did not represent all Palestinian women, which may not reflect geographical variances. Second, the study relies on women's subjective experiences; therefore, recall bias may have altered menopause onset. Despite these limitations, this is the first study in Palestine to define the age of onset, key symptoms, and severity during critical periods of women's lives, which can help researchers build national interventions. Primary care must identify women with low quality of life and severe symptoms who need medical and psychosocial care.

## CONCLUSION

In conclusion, the average age of menopause onset matches the global range of natural menopausal ages. Exhaustion, stress, irritation, and sadness were more common than hot flashes and nocturnal sweats. The mean MRS score reflects poor quality of life and menopausal symptom management. We fully support postmenopausal-sensitive healthcare delivery methods. All women approaching menopause should have access to supportive networks and preventive programs for a healthy transition.

## *Ethics approval and consent to participate*

This study adhered to the Declaration of Helsinki. An-Najah University Institutional Review Board approved it (Ref: Med. Oct.

2018/31), approval from the Palestinian Ministry of Health was obtained, and verbal consent from each woman; privacy and data confidentiality were ensured, and data was used for research purposes only.

## Consent for publication

Not applicable

## Availability of data and materials

The datasets used and analyzed during the current study are available from the corresponding author upon reasonable request.

## Author's contribution

SB, LS, and MA have contributed to the design, data analysis, and draft writing. BN and NN contributed to data collection and revised the article's final version. This article is extracted from a medical degree graduation project.

## Competing interest

The authors declare no conflict of interest.

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