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Original Research Article

Quality of Life in Menopausal Women: Effects of Sociodemographic Factors and Symptoms

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Abstract: ***Background*:** The aim of this study was to assess the quality of life (QOL) of menopausal women in Port Harcourt, Nigeria, with a focus on understanding the sociodemographic factors and symptomatology influencing their well-being. ***Methods*:** A cross-sectional observational design utilizing semi-structured questionnaires was used. The data were collected from 320 menopausal women aged 30-60 years. Sociodemographic characteristics, menstrual history, menopausal symptoms, and QOL were evaluated using validated scales and statistical analyses. ***Results*:** Significant findings included a prevalence of hot flashes (68.3%) and depressive moods (73.1%) among the participants. Sociodemographic factors such as age (p=0.023), marital status (p=0.004), education (p=0.017), and religion (p=0.001) were significantly associated with QOL domains. Psychological symptoms, including anxiety and intrusive thoughts, significantly impacted work efficiency (p=0.014), family relationships (p=0.035), and home responsibilities (p=0.002). Overall, 70.0% of participants reported poor QOL, highlighting the substantial burden of menopausal symptoms on daily functioning and social interactions. ***Conclusion*:** Improving menopausal women's quality of life in Port Harcourt requires accessible education, tailored healthcare, and supportive policies. Integrating menopause awareness into primary healthcare and offering psychological support are crucial for symptom management and overall well-being. Empowering women with targeted resources and supportive environments will effectively enhance their quality of life during this life transition.

Keywords: Menopause, Quality of life, Women, Menopause Rating Scale, Menopausal symptoms, Port Harcourt, Nigeria.

INTRODUCTION

Menopause, a natural biological transition marking the end of menstruation and reproductive capability in women typically occurring between ages 45 and 55, results from reproductive aging and follicular depletion, leading to reduced estrogen levels and metabolic changes [1-4]. This universal phenomenon varies widely in its manifestations and impact on women's lives due to biological, psychosocial, and environmental factors [3-6].

Quality of life (QOL) during menopause encompasses physical, psychological, and social well-being, which are crucial for assessing holistic health [7-9]. Menopausal symptoms range from vasomotor (e.g., hot flashes, night sweats) to genitourinary (e.g., vaginal dryness, urinary issues) and psychological (e.g., mood swings, sleep disturbances) challenges, which significantly affect QOL in addition to health risks such as osteoporosis and cardiovascular disease [3-6, 10].

In diverse sociocultural contexts such as Port Harcourt, Nigeria, where cultural norms and healthcare access intersect, understanding menopausal experiences is crucial yet understudied outside urban areas [11, 12]. This study

explored menopausal women's QOL in Port Harcourt, aiming to provide empirical insights into their experiences and to inform targeted healthcare interventions. By elucidating these complexities, this research aims to enhance the well-being of menopausal women in similar settings.

MATERIALS AND METHODS

Study Design

This study used a cross-sectional observational design to assess the quality of life among menopausal women at a specific point in time [13-15]. Data were collected from a diverse sample of menopausal women in Port Harcourt to inform healthcare interventions and policies aimed at improving their quality of life. The study was conducted from September to November 2022.

Participant Selection

The study targeted women residing in Port Harcourt, Rivers State, Nigeria. Participants were recruited through a multistage sampling technique involving both random and purposive methods. Hospitals were visited to raise awareness and encourage participation, with public hospital management helping to identify potential participants. Local women's groups and community organizations were also engaged in facilitating recruitment. The inclusion criteria included women aged 30–60 years who visited gynecological units in identified public hospitals in Port Harcourt, Rivers State, and who were currently experiencing menopause or had undergone menopause within the past five years. Women who experienced early menopause (younger than 45 years), premature menopause (younger than 40 years), medically or surgically induced menopause, hormone replacement therapy, or pregnancy or lactation were included [12, 13]. The exclusion criteria included women with severe cognitive impairments or other medical conditions affecting their ability to participate [16].

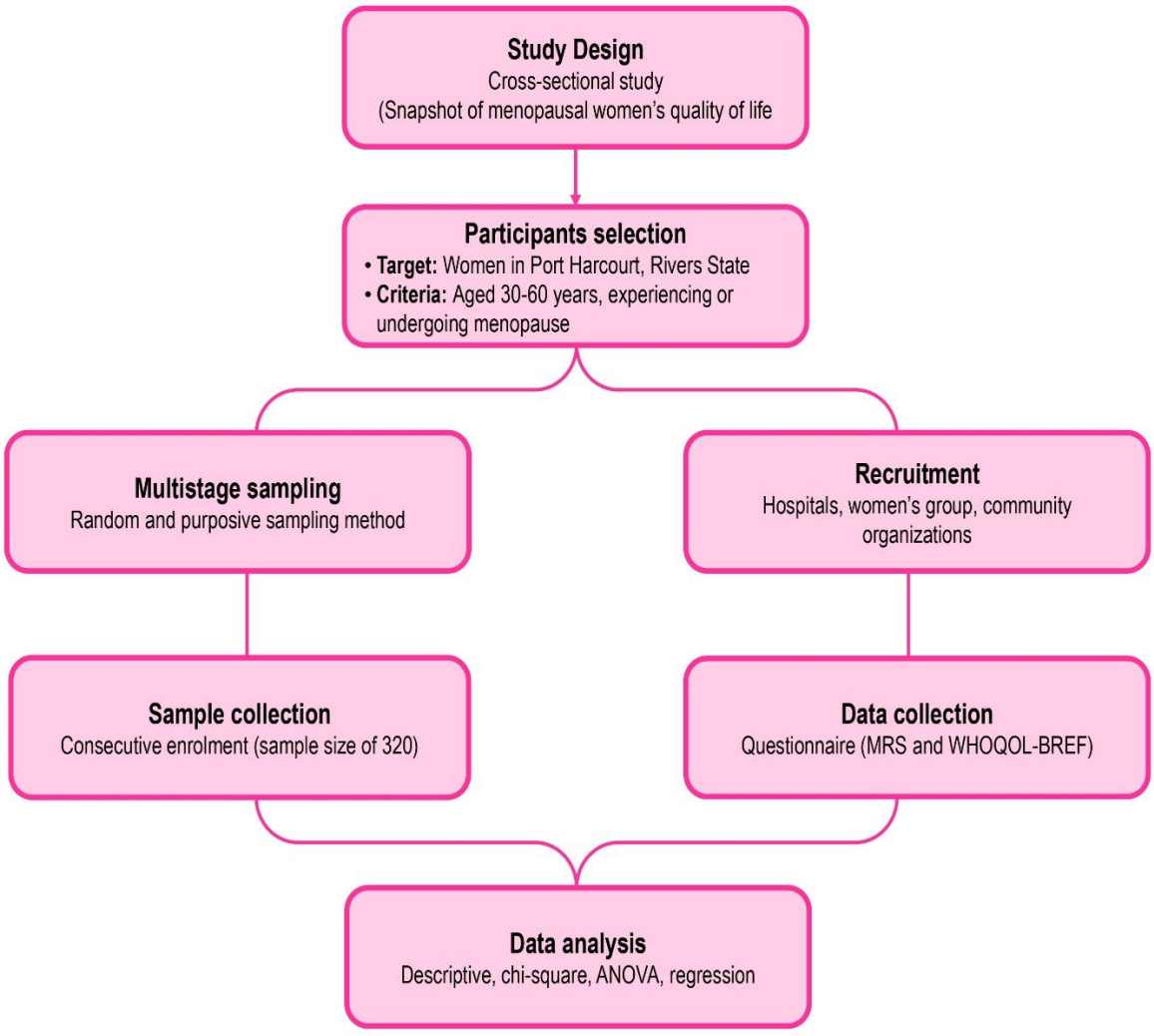

Figure 1: Study design

Sample Size Determination

Using the statistical formula $n=z^2pq/d^2$, informed by Golyan *et al*., [17] and Masjoudi *et al*., [18], a sample size of 320 participants was determined, ensuring a 5% margin of error and a 95% confidence level. All eligible menopausal women attending the clinics during the study period were consecutively enrolled.

Data Collection Methods

The data were collected using semi-structured questionnaires and in-depth interviews. The questionnaires collected participant information (age, education, marital status, occupation, socioeconomic status), menstrual history (perimenopausal treatments, symptoms/moods, menopause impact on quality of life), and psychological symptoms (depressive mood, irritability, anxiety, physical and mental exhaustion, graded from 0 to 3). The Menopause Rating Scale (MRS) assesses menopausal symptom severity across somatic, psychological, and urogenital domains [19, 20], with ratings ranging from 0 to 4. Quality of life (QOL) was evaluated using the WHOQOL-BREF [21], covering physical health, mental health, social relationships, and environmental factors, with participants rating their satisfaction or perceived quality of life in each domain.

Statistical Analysis

The collected data were entered into Microsoft Excel version 2019, cleaned, and analyzed using SPSS version 26.0. Descriptive statistics were used to summarize the participants' sociodemographic characteristics. Categorical variables were analyzed using chi-square tests to identify significant associations, while independent t-tests were used to compare mean symptom scores and quality of life (QOL) indicators between perimenopausal and postmenopausal women. Significance was determined with p-values <0.05.

RESULTS

The sociodemographic characteristics of menopausal participants (Table 1) revealed significant differences according to age group (43.4% aged 51-60 years, p=0.023), marital status (54.4% married, p=0.004), education level (46.3% with tertiary education, p=0.017), and religion (95.6% Christian, p=0.001). Menstrual cycle evaluations (Table 2) revealed that 48.3% of patients had their last menstrual period 1-2 years prior, with significant differences in the incidence of irregular cycle onset (mean age 37.5 years, p=0.004) and post-menopausal status (31.7%, p=0.002). Treatment for perimenopausal signs (Table 3) indicated that hot flashes (68.3%) and depressive moods (73.1%) were prevalent, with 72.3% of those on HRT reporting symptom alleviation (p=0.024). The prevalence of menopausal symptoms (Table 4) was high for depressive mood (73.1%) and concentration issues (75.0%), with total symptoms affecting 82.5% of the participants. The mean symptom scores (Table 5) were peri-menopausal women with symptoms such as hot flashes (1.09 vs. 0.44, p=0.001) and depressive mood (1.60 vs. 1.02, p=0.048). Menopausal mood symptoms (Table 6), such as severe anxiety (20.0%, p=0.002) and intrusive ideas (8.4%, p=0.001), were significant, with 40.0% reporting improved mood (p=0.038). Post-menopausal mood symptoms (Table 7) included significant anxiety (11.9%, p=0.029) and intrusive ideas (20.0%, p=0.003), with higher agitation post-menopause (13.4%, p=0.016). QOL (Table 8) had a significant impact on work efficiency (35.9%, p=0.014), family relationships (35.9%, p=0.035), and home responsibilities (40.0%, p=0.002). Poor QOL was prevalent in 75.0% of the participants in the psychological domain and 61.9% of those in the somato-vegetative domain (Table 9), with overall poor QOL in 70.0% of the participants. Sociodemographic factors (Table 10) significantly influenced QOL, with poor QOL more common in certain demographic groups, such as those with no children (37.1%, p=0.04) and Christians (79.5%, p=0.001).

Table 1: Sociodemographic Characteristics of Menopausal Subjects

Parameter	Frequency (n=320)	Percentage (%)	P-value
Age Group			
21 to 30 years	46	14.4	0.023*
31 to 40 years	61	19.1	
41 to 50 years	48	15.0	
51 to 60 years	139	43.4	
>60 years	26	8.1	
Marital Status			
Single	118	36.9	0.004*
Married	174	54.4	
Divorced	14	4.4	
Prefer not to mention	14	4.4	
Number of Children			
None	93	29.1	0.063
1 to 3	134	41.9	
4 to 6	80	25.0	
7 and above	13	4.1	

Parameter	Frequency (n=320)	Percentage (%)	P-value
Education			
No formal education	16	5.0	0.017*
Primary	50	15.6	
Secondary	106	33.1	
Tertiary	148	46.3	
Religion			
Christian	306	95.6	0.001*
Islam	14	4.4	

*Significant at p<0.05

Table 2: Evaluation of the Menstrual Cycle of Menopausal Subjects

Question	Frequency (n=320)	Percentage (%)	P-value
What was the approximate date of your last menstrual period?			
1 to 2 years ago	155	48.3	0.044*
3 to 4 years ago	98	30.8	
5 to 6 years ago	43	13.4	
7 to 8 years ago	24	7.5	
Regular menstrual cycle			
Yes	272	85.0	0.001*
No	48	15.0	
What age did your menstrual cycle first become irregular?			
<30 years	141	44.2	0.004*
31 to 40 years	90	28.3	
41 to 50 years	64	20.0	
>50 years	25	7.5	
What age did you think you entered Peri-menopause?			
<30 years	96	30.0	0.065
31 to 40 years	147	45.8	
41 to 50 years	64	20.0	
>50 years	13	4.2	
Are you post-menopausal?			
Yes	102	31.7	0.002*
No	218	68.3	
Mean age at Peri-menopause, post-menopause, and irregular menstrual cycle			
Mean age			
Mean age when menstrual cycle became irregular	37.5 ± 3.12 years		
Mean age of peri-menopause	42.4 ± 4.92 years		
Mean age of menopause	46.2 ± 6.10 years		

* Significant at p<0.05

Table 3: Assessment of Treatment for Perimenopausal Signs Among Subjects

Question	Frequency (n=320)	Percentage (%)	P-value
If post-menopausal, what age did you consider yourself post-menopausal?			
Not Applicable	117	36.7	0.007*
<30 years	13	4.1	
31 to 40 years	96	30.0	
41 to 50 years	64	20.0	
>50 years	30	9.4	
What happened that made you think you were in peri-menopause? (#)			
Hot flashes	218	68.3	0.051
Weight gain	118	36.9	
Sleeping difficulty	136	42.5	
Night Sweat	94	29.4	
Depressive mood	234	73.1	
Irritability	160	50.0	
Mood swings	74	23.1	
Decrease in ability to concentrate	240	75.0	

Question	Frequency (n=320)	Percentage (%)	P-value
Easy tearfulness	26	8.1	
Loss of sexual interest	154	48.1	
Vaginal dryness	176	55.0	
Short cycles	130	40.6	
Have you received any medical treatment, such as a hysterectomy or chemotherapy that caused or precipitated menopause?			
Yes	48	15.0	0.001*
No	272	85.0	
Did you or do you currently take hormone replacement therapy (HRT)?			
YES, I am currently on HRT	13	4.1	0.006*
YES, I have taken HRT but do not currently	102	31.9	
NO, I do not and have never taken HRT	205	64.1	
If yes, has it alleviated any mood symptoms? (n=83)			
Yes	60	72.3	0.024*
No	23	27.7	

(#) Multiple responses; *significant at p<0.05

Table 4: Prevalence of Menopausal Symptoms According to Menopause Rating Scale

Domains	Symptoms	n (%)	Prevalence of each domain (%)
Somato-vegetative domain	Hot flashes	218 (68.1)	32.1
	Weight gain	118 (36.9)	
	Sleeping difficulty	136 (42.5)	
	Night sweat	94 (29.4)	
Psychological domain	Depressive mood	234 (73.1)	41.8
	Irritability	160 (50.0)	
	Decrease in ability to concentrate	240 (75.0)	
	Mood swings	74 (23.1)	
	Easy tearfulness	26 (8.1)	
Uro-genital domain	Loss of sexual interest	154 (48.1)	26.1
	Vaginal dryness	176 (55.0)	
	Short cycles	130 (40.6)	

Prevalence of menopausal symptoms = 82.5%

Table 5: Mean score of each menopausal symptom by menopausal status

Symptoms	Peri-menopausal	Post-menopausal	*P-value*
Hot flashes	1.09±0.62	0.44±0.31	0.001*
Weight gain	1.11±1.01	0.79±0.56	0.063
Sleeping difficulty	1.81±0.90	1.31±0.88	0.044*
Night sweat	1.55±0.78	1.98±1.15	0.010*
Somato-vegetative Domain	**4.96±3.31**	**4.52±2.90**	**0.619**
Depressive mood	1.60±0.84	1.02±1.12	0.048*
Irritability	1.54±1.11	1.72±1.24	0.712
Decrease in ability to concentrate	2.13±1.15	1.51±1.20	0.059
Mood Swing	1.85±1.30	1.10±0.87	0.041*
Easy tearfulness	0.67±0.21	0.53±0.43	0.701
Psychological Domain	**7.79±4.61**	**5.88±4.86**	**0.049***
Loss of sexual interest	1.14±0.80	0.23±0.70	0.037*
Vaginal dryness	0.90±0.62	0.52±0.52	0.055
Short cycles	0.42±0.51	0.36±0.82	0.611
Uro-genital Domain	**2.46±1.93**	**1.11±2.04**	**0.030***
Total Domain score	**15.21±9.85**	**11.51±9.80**	**0.049***

* Significant at p<0.05

Table 6: Symptoms/Mood Description for Peri-Menopausal Women (n=320)

Symptom	Not at all n(%)	Mild n(%)	Moderate n(%)	Severe n(%)	P-value
Depressed mood or feelings of hopelessness	96 (30.0)	128 (40.0)	77 (24.1)	19 (5.9)	0.291
Increased mood swings.	64 (20.0)	144 (45.0)	50 (15.6)	16 (5.0)	0.05*
Feelings of elation or agitation associated with symptoms like...	115 (35.9)	109 (34.1)	101 (31.6)	13 (4.1)	0.462
Improved mood (specifically an improvement in the symptoms of...	128 (40.0)	101 (31.6)	64 (20.0)	27 (8.4)	0.038*
Feeling very anxious, more so than what you would consider normal	115 (35.9)	115 (35.9)	38 (11.9)	64 (20.0)	0.002*
Recurrent, unwanted, intrusive ideas, images, or impulses...	128 (40.0)	64 (20.0)	101 (31.6)	27 (8.4)	0.001*
Feeling the need to check things over and over, or repeat actions...	91 (28.4)	38 (11.9)	154 (48.1)	38 (11.9)	0.000*
Having panic attacks... (Panic attacks are sudden unexpected...	128 (40.0)	64 (20.0)	77 (24.1)	51 (15.9)	0.004*

* Significant at p<0.05

Table 7: Symptoms/Mood Description for Post-Menopausal Women (n=320)

Symptom	Not at all n(%)	Mild n(%)	Moderate n(%)	Severe n(%)	P-value
Depressed mood or feelings of hopelessness	141 (44.1)	82 (25.6)	69 (21.6)	28 (8.8)	0.316
Increased mood swings.	88 (27.5)	141 (44.1)	77 (24.1)	14 (4.4)	0.412
Feelings of elation or agitation associated with symptoms like...	85 (26.6)	64 (20.0)	128 (40.0)	43 (13.4)	0.016*
Improved mood (specifically an improvement in the symptoms of...	128 (40.0)	101 (31.6)	77 (24.1)	14 (4.4)	0.381
Feeling very anxious, more so than what you would consider normal	50 (15.6)	141 (44.1)	91 (28.4)	38 (11.9)	0.029*
Recurrent, unwanted, intrusive ideas, images, or impulses...	128 (40.0)	75 (23.4)	53 (16.6)	64 (20.0)	0.003*
Feeling the need to check things over and over, or repeat actions...	115 (35.9)	88 (27.5)	94 (29.4)	23 (7.2)	0.552
Having panic attacks... (Panic attacks are sudden unexpected...	133 (41.6)	80 (25.0)	86 (26.9)	21 (6.6)	0.483

* Significant at p<0.05

Table 8: Effect of Perimenopausal and Post-menopausal Symptoms on QOL (n=320)

Question on Effect	Not at all n(%)	Mild n(%)	Moderate n(%)	Severe n(%)	P-value
Work efficiency	80 (25.0)	96 (30.0)	115 (35.9)	29 (9.1)	0.014*
Relationships with co-workers	128 (40.0)	82 (25.6)	77 (24.1)	33 (10.3)	0.058
Relationships with your family	118 (36.9)	64 (20.0)	115 (35.9)	23 (7.2)	0.035*
Social life activities	166 (51.9)	86 (26.9)	64 (20.0)	4 (1.3)	0.617
Home responsibilities	91 (28.4)	91 (28.4)	128 (40.0)	10 (3.1)	0.002*

* Significant at p<0.05

Table 9: Effect of Perimenopausal and Post-menopausal Symptoms on QOL Domainwise (n=320)

Domain	Quality of Life (QOL)	Good n(%)	Poor n(%)
Somato-vegetative	Somato-vegetative	122 (38.1)	198 (61.9)
Psychological	Psychological	80 (25.0)	240 (75.0)
Uro-genital	Uro-genital	208 (65.0)	112 (35.0)
All Domain	All Domain	96 (30.0)	224 (70.0)

Table 10: Association of Sociodemographic Characteristics with QOL (n=320)

Sociodemographics	Good QOL (n=96)	Poor QOL (n=224)	Total (n=320), n (%)	$\chi 2$ (P-value)
Age group				
21 to 30 years	14 (14.6)	32 (14.3)	46 (14.4)	3.45 (0.237)
31 to 40 years	27 (28.1)	34 (15.2)	61 (19.1)	
41 to 50 years	16 (16.7)	32 (14.3)	48 (15.0)	
51 to 60 years	28 (29.2)	111 (49.6)	139 (43.4)	
>60 years	11 (11.5)	15 (6.7)	26 (8.1)	
Marital status				
Single	12 (12.5)	46 (20.5)	118 (36.9)	21.08 (0.02*)
Married	21 (21.9)	153 (68.3)	174 (54.4)	
Divorced	2 (2.1)	12 (5.4)	14 (4.4)	
Prefer not to mention	1 (1.0)	13 (5.8)	14 (4.4)	
Number of Children				
None	10 (10.4)	83 (37.1)	93 (29.1)	16.47 (0.04*)
1 to 3	14 (14.6)	120 (53.6)	134 (41.9)	
4 to 6	7 (7.3)	73 (32.6)	80 (25.0)	
7 and above	5 (5.2)	8 (3.6)	13 (4.1)	
Education				
No formal Education	2 (2.1)	14 (6.3)	16 (5.0)	12.10 (0.05*)
Primary	6 (6.3)	44 (19.6)	50 (15.6)	
Secondary	8 (8.3)	98 (43.8)	106 (33.1)	
Tertiary	20 (20.8)	128 (57.1)	148 (46.3)	
Religion				
Christian	28 (29.2)	178 (79.5)	306 (95.6)	36.12 (0.001*)
Islam	3 (3.1)	11 (4.9)	14 (4.4)	

* Significant at $p<0.05$

DISCUSSION

Spontaneous menopause represents the transition from the reproductive phase to the non-reproductive stage in a woman's life and is typically marked by the cessation of menstruation after 12 consecutive months of amenorrhea without pathological or physiological causes [22, 23]. The manifestations of menopausal symptoms extend beyond the reproductive system, affecting skeletal, cardiovascular, and psychological well-being. With increasing longevity, women are experiencing prolonged menopausal periods, constituting approximately one-third of their lifespan, thereby exacerbating health-related issues [24, 25]. The perimenopause/menopause transition, spanning approximately 3-5 years, denotes the phase preceding and extending up to one year after the final menstrual period and is characterized by fluctuations in menstrual cycles and reproductive hormone levels [26]. Individual responses to menopause exhibit significant variations influenced by factors such as genetics, culture, lifestyle, socioeconomic status, education, behavior, and dietary habits.

The present study examined the impact of menopause on health-related quality of life (QOL) in women. It was found that 70% of menopausal women experienced poor QOL, consistent with findings by Ray and Dasgupta [26] and Velasco-Téllez *et al.*, [27], who reported rates of 77% and 70%, respectively. In contrast, Abdullah *et al.*, [28] and Krishnamoorthy *et al.*, [29] reported lower rates of poor QOL, at 52.3% and 37.2%, respectively. Discrepancies in these findings may be attributed to variations in symptom categorization, study locations, and the tools used to assess QOL.

The average age of the participants in this study was 50.72±5.11 years, which is consistent with the findings of similar studies by Pathak and Shivaswamy [30], Punia *et al.*, [31], and Kalhan *et al.*, [32], in which the mean participant ages were 52.04±5.58 years, 52.49±6.18 years, and 53.6±5.1 years, respectively. However, Sood *et al.*, [33] reported a mean participant age of 49.4±4.8 years, including premenopausal individuals, unlike the present study, which focused solely on perimenopausal and post-menopausal subjects. In the present study, the majority of participants were 51 to 60 years of age, were married, had 1 to 3 children, and had attained secondary school education. A notable proportion of the participants identified as Christians.

The research revealed a significant correlation between QOL and various sociodemographic factors, including marital status, number of children, education level, and religion. However, no significant relationship was found between QOL and age. Krishnamoorthy *et al.*, [29] identified a significant link between QOL and marital status in their study, whereas Kalhan *et al.*, [32] reported no such association between QOL and sociodemographic variables. These discrepancies in findings could be attributed to differences in study locations, social contexts, customs, and religious influences.

In our study, the mean age at menopause was 46.2±6.10 years. This finding aligns with similar studies by Kalhan *et al*., [32], Krishnamoorthy *et al*., [29], Sood *et al*., [33], and Ahuja [34], where the mean age of menopause ranged from 45.2±4.7 years to 45.59±5.59 years. However, our results contrast with those of Nisar and Sohoo [35], Singh and Pradhan [36], Joseph *et al.*, [37], and Khatoon *et al.*, [38]. Okonofua *et al.*, [39] reported that the mean and median ages of menopause in Nigerian women were 48.4 and 48.0 years, respectively, whereas the average age of menopause in women in the USA was 51 years [40]. These disparities in menopausal age may be attributed to genetic and environmental factors and ethnic differences.

The majority of the study subjects in our research began experiencing irregular menstrual cycles at various ages, predominantly between 31 and 40 years. However, 85% of the participants maintained regular menstrual cycles, consistent with findings from studies by Kalhan *et al*., [32], Krishnamoorthy *et al*., [29], and Moustafa *et al*., [41].

In our study, 31.7% of the participants were categorized as post-menopausal, while 68% belonged to the perimenopausal group. This distribution resembles that reported by Punia *et al*. [31], where post-menopausal and perimenopausal women accounted for 55.5% and 45.5%, respectively, but differs from the findings of Ahuja [34] and Kalhan *et al*., [32].

Within the scope of this investigation, the prevalence of menopausal symptoms within the somato-vegetative, psychological, and uro-genital domains was 32.1%, 41.8%, and 26.1%, respectively, consistent with findings from Kalhan *et al*., [32] and Krishnamoorthy *et al*., [29] but differing from that of Joseph *et al*., [37], who reported higher prevalence rates across all domains of the Menopause Rating Scale (MRS). The overall prevalence of menopausal symptoms across all domains in this research was 82.5%, with mood swings, depressive moods, and hot flashes emerging as the most common symptoms. However, these findings contrast with those reported by Sood *et al*., [33], Al-Musa *et al*., [42], Joseph *et al*., [37], and Joshi and Nair [43], who reported lower prevalence rates. Conversely, other studies, such as those by Punia *et al*., [31], Singh and Pradhan [36], Moustafa *et al*., [41], and Khatoon *et al*., [38], also reported lower prevalence rates of menopausal symptoms.

The mean score in this study was highest for night sweats (1.98±0.84), mood swings (1.85±1.30), and depressive mood (1.60±0.84) and lowest for loss of sexual interest (0.23±0.70) and short cycles (0.36±0.82). These findings differ from those of Sharma and Mahajan [44], who reported the highest mean score for physical and mental exhaustion (1.93±1.18) and the lowest for dryness of the vagina (0.71±1.02). They also found that the most common symptom was joint and muscular discomfort (78.42%), while vaginal dryness was the least common (39.5%).

The mean total score for perimenopausal symptoms in the study was 15.21±9.85, while the mean total score for post-menopausal symptoms was 11.51±9.80. Compared with post-menopausal women, perimenopausal women had a significantly greater mean score for perimenopausal symptoms. This finding contrasts with a report by Kalhan *et al*., [32], who reported no significant difference in the total mean score between perimenopausal and post-menopausal patients in their study. The study also noted differences in the mean scores of individual domains and overall mean scores compared to other studies [32, 41, 44]. However, similar findings were reported by Al-Musa *et al*., [42] and Nisar and Sohoo [35], where a significant difference between the two groups was observed. Somatic and psychological symptoms were more prevalent among the women in this study, possibly influenced by factors such as education level and lifestyle choices [45, 46]. Additionally, factors such as hormone levels, ethnicity, climate, diet, lifestyle, smoking habits, and attitudes toward menopause can impact the prevalence of somato-vegetative symptoms. As women progress to post-menopausal age, declining estrogen levels can lead to uro-genital symptoms such as vaginal atrophy and dryness; however, these symptoms were less common in the study participants, possibly due to decreased sexual activity and adaptation over time [47, 48].

LIMITATIONS

The limitations of the study include potential sampling bias toward women aged 51 to 60 with secondary school education, a cross-sectional design limiting causal inference, reliance on self-reported data for symptoms and quality of life assessments introducing response bias, exclusion of premenopausal women possibly affecting generalizability, variability in assessment tools impacting comparability, and the influence of sociodemographic and cultural factors not extensively explored, alongside potential differences in menopausal age and regional contexts.

CONCLUSION

Based on the comprehensive analysis of menopausal symptoms and their impact on quality of life among peri-menopausal and post-menopausal women, this study underscores the significant burden these symptoms impose, particularly in domains such as somatic, psychological, and uro-genital health. Despite the identified limitations, including sampling bias and reliance on self-reported data, the findings provide valuable insights into the nuanced experiences of menopause within the studied population. Addressing these challenges requires tailored healthcare interventions that

consider sociodemographic diversity and cultural influences, aiming to improve the overall well-being and quality of life of menopausal women across diverse settings. Future research should strive for longitudinal designs and incorporate broader demographic perspectives to enhance the validity and applicability of findings in mitigating the multifaceted impacts of menopause.

Authors' Contributions

All authors contributed significantly to this manuscript and participated in its critical revision for intellectual content and accuracy. The final manuscript has been reviewed and approved by all authors.

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Availability of Data and Materials

The study data will be available to researchers upon request to the corresponding author, Precious Ojo Uahomo. Access will be granted upon completion of a data use agreement, which includes crediting sources, ethical adherence, confidentiality, and data dissemination restrictions.

Ethical Considerations

Ethical approval for this study was obtained from the Ethics Committee of the University of Port Harcourt. All procedures performed in this study involving human participants were conducted in accordance with the ethical standards of the 1964 Declaration of Helsinki and its later amendments. Informed consent was obtained from all individual participants included in the study.

Conflicts of Interest: The authors declare no competing interests related to this study.

REFERENCES

1. Pollycove, R., Naftolin, F., & Simon, J. A. (2011). The evolutionary origin and significance of menopause. *Menopause*, *18*(3), 336-342. https://doi.org/10.1097/gme.0b013e3181ed957a
2. Gold, E. B. (2011). The timing of the age at which natural menopause occurs. *Obstetrics and Gynecology Clinics*, *38*(3), 425-440. https://doi.org/10.1016/j.ogc.2011.05.002
3. Davis, S. R., Lambrinoudaki, I., Lumsden, M., Mishra, G. D., Pal, L., & Rees, M. (2015). Menopause Nat Rev Dis Primers. 2015; 1: 15004. https://doi.org/10.1038/nrdp.2015.4
4. Ilankoon, I. M. P. S., Samarasinghe, K., & Elgán, C. (2021). Menopause is a natural stage of aging: a qualitative study. *BMC women's health*, *21*, 1-9. https://doi.org/10.1186/s12905-020-01164-6
5. National Institute on Aging (NIA). (2022). Research explores the impact of menopause on women's health and aging. Retrieved from https://www.nia.nih.gov/news/research-explores-impact-menopause-womens-health-and-aging
6. World Health Organization. Menopause. 2022. Retrieved from https://www.who.int/news-room/fact-sheets/detail/menopause
7. Burckhardt, C. S., & Anderson, K. L. (2003). The Quality of Life Scale (QOLS): reliability, validity, and utilization. *Health and quality of life outcomes*, *1*, 1-7. https://doi.org/10.1186/1477-7525-1-60
8. Skevington, S. M. (2007). Quality of Life. Encyclopedia of Stress (Second Edition), 317-319. https://doi.org/10.1016/B978-012373947-6.00616-4
9. Teoli, D., & Bhardwaj, A. (2023). Quality Of Life. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing. Retrieved from https://www.ncbi.nlm.nih.gov/books/NBK536962/
10. Nazarpour, S., Simbar, M., Ramezani Tehrani, F., & Alavi Majd, H. (2020). Factors associated with quality of life of postmenopausal women living in Iran. *BMC women's health*, *20*, 1-9. https://doi.org/10.1186/s12905-020-00960-4
11. Lock, M. (1994). Menopause in cultural context. *Experimental Gerontology*, *29*(3-4), 307-317. https://doi.org/10.1016/0531-5565(94)90011-6
12. Dienye, P. O., Judah, F., & Ndukwu, G. (2013). Frequency of symptoms and health seeking behaviours of menopausal women in an out-patient clinic in Port Harcourt, Nigeria. *Global journal of health science*, *5*(4), 39-47. https://doi.org/10.5539/gjhs.v5n4p39
13. Ogbu, O. S., Zigabelbari, Z. V., & Friday, S. (2020). Factors Affecting Age of Onset of Menopause at Child Birth, Birth Control of Nigerian Women. *J Adv Med Med Res*, *31*(10), 1-6. https://doi.org/10.9734/jammr/2019/v31i1030326
14. Gupta, G., & Kumari, R. (2021). Quality of life among menopausal women. *Indian Journal of Scientific Research*, *11*(2), 25-32. Retrieved from https://www.link.gale.com/apps/doc/A653487175/AONE?u=anon~23dca143&sid=googleScholar&xid=9b2e1911
15. Sharma, P., Singh, G., & Vohra, J. G. (2023). Exploring the Menopausal Journey: Unveiling Varied Experiences in Rural and Urban Solan. *IAR Journal of Medical Sciences*, *4*(5), 6-12.
16. Hayford, I. K. (2023). Radio Health Programmes and Menopause Awareness among women of Perimenopausal Age in Rivers State, South-South Nigeria. *Formosa Journal of Multidisciplinary Research*, *2*(5), 983-998. https://doi.org/10.55927/fjmr.v2i5.3853

17. Golyan Tehrani, S. H., Mir Mohammad Ali, M., Mahmoudi, M., & Khaledian, Z. (2002). Study of quality of life and its patterns in different stages of menopause for women in Tehran. *Hayat*, *8*(3), 33-41.
18. Masjoudi, M., Amjadi, M. A., & Leyli, E. K. N. (2017). Severity and frequency of menopausal symptoms in middle aged women, Rasht, Iran. *Journal of clinical and diagnostic research: JCDR*, *11*(8), QC17. https://doi.org/10.7860/JCDR/2017/26994.10515
19. Heinemann, L. A., Potthoff, P., & Schneider, H. P. (2003). International versions of the menopause rating scale (MRS). *Health and quality of life outcomes*, *1*, 1-4. https://doi.org/10.1186/1477-7525-1-28
20. Heinemann, K., Ruebig, A., Potthoff, P., Schneider, H. P., Strelow, F., Heinemann, L. A., & Thai, D. M. (2004). The Menopause Rating Scale (MRS) scale: a methodological review. *Health and Quality of life Outcomes*, *2*, 1-8. https://doi.org/10.1186/1477-7525-2-45
21. Jenabi, E., Shobeiri, F., Hazavehei, S. M., & Roshanaei, G. (2015). Assessment of questionnaire measuring quality of life in menopausal women: a systematic review. *Oman medical journal*, *30*(3), 151-156. https://doi.org/10.5001/omj.2015.34
22. World Health Organization (WHO). (1996). Report of a WHO Scientific Group: Research on the Menopause in the 1990's. WHO Technical Report Series 866. World Health Organization. Retrieved from http://whqlibdoc.who.int/trs/WHO_TRS_866.pdf
23. Digumarti, L., Agarwal, N., Vaze, N., Shah, R., & Malik, S. (2013). Clinical practice guidelines on menopause:* An executive summary and recommendations. *Journal of mid-life health*, *4*(2), 77-106. https://doi.org/10.4103/0976-7800.115290
24. Vaze, N., & Joshi, S. (2010). Yoga and menopausal transition. *Journal of mid-life health*, *1*(2), 56-58. https://doi.org/10.4103/0976-7800.76212
25. Harlow, S. D., & Paramsothy, P. (2011). Menstruation and the menopausal transition. *Obstetrics and Gynecology Clinics*, *38*(3), 595-607. https://doi.org/10.1016/j.ogc.2011.05.010
26. Ray, S., & Dasgupta, A. (2012). An assessment of QOL and its determining factors of post menopausal women in a rural area of West Bengal, India: A multivariate analysis. *International Journal of Medicine and Public Health*, *2*(4), 129.
27. Velasco-Téllez, C., Cortés-Bonilla, M., Ortiz-Luna, G., Sánchez-Zelayeta, L., Méndez-Serrano, H., & Salazar-Jiménez, C. (2020). Quality of Life and Menopause, from the edited volume Quality of Life - Biopsychosocial Perspectives edited by Floriana Irtelli, Federico Durbano and Simon George Taukeni. https://doi.org/10.5772/intechopen.88983
28. Bahiyah Abdullah, M., Moize, B., Ismail, B. A., & Zamri, M. (2017). Prevalence of menopausal symptoms, its effect to quality of life among Malaysian women and their treatment seeking behaviour. *Med J Malaysia*, *72*(2), 95.
29. Krishnamoorthy, Y., Sarveswaran, G., Jayaseelan, V., Sakthivel, M., Arivarasan, Y., & Bharathnag, N. (2018). Assessment of quality of life based on psychological, somatovegetative, and urogenital health problems among postmenopausal women in Urban Puducherry, South India: A cross-sectional observational study. *Journal of Mid-life Health*, *9*(4), 173-179.
30. Pathak, N., & Shivaswamy, M. S. (2018). Prevalence of menopausal symptoms among postmenopausal women of urban Belagavi, Karnataka. *Indian Journal of Health Sciences and Biomedical Research KLEU*, *11*(1), 77-80.
31. Punia, A., Lekha, S., & Punia, M. S. (2017). Assessment of menopausal problems among rural women using modified menopause rating scale. *Int J Med Sci Public Health*, *6*(4), 1.
32. Kalhan, M., Singhania, K., Choudhary, P., Verma, S., Kaushal, P., & Singh, T. (2020). Prevalence of menopausal symptoms and its effect on quality of life among rural middle aged women (40–60 Years) of Haryana, India. *International Journal of Applied and Basic Medical Research*, *10*(3), 183-188.
33. Sood, A., Singh, M., Raina, S., Bhardwaj, A., Chander, V., & Manhas, A. (2017). Study of menopausal symptoms in the nursing staff and female attendants in a rural medical college. *Tropical Journal of Medical Research*, *20*(2), 185-185.
34. Ahuja, M. (2016). Age of menopause and determinants of menopause age: A PAN India survey by IMS. *Journal of mid-life health*, *7*(3), 126-131.
35. Nisar, N., & Sohoo, N. A. (2010). Severity of Menopausal symptoms and the quality of life at different status of Menopause: a community based survey from rural Sindh, Pakistan. *International Journal of Collaborative Research on Internal Medicine & Public Health*, *2*(5), 118.
36. Singh, A., & Pradhan, S. K. (2014). Menopausal symptoms of postmenopausal women in a rural community of Delhi, India: A cross-sectional study. *Journal of mid-life health*, *5*(2), 62-67.
37. Joseph, N., Nagaraj, K., Saralaya, V., Nelliyanil, M., & Rao, P. J. (2014). Assessment of menopausal symptoms among women attending various outreach clinics in South Canara District of India. *Journal of mid-life health*, *5*(2), 84-90.
38. Khatoon, F., Sinha, P., Shahid, S., & Gupta, U. (2018). Assessment of menopausal symptoms using modified menopause rating scale (MRS) in women of Northern India. *Int J Reprod Contracept Obstet Gynecol*, *7*(3), 947-951.
39. Okonofua, F. E., Lawal, A., & Bamgbose, J. K. (1990). Features of menopause and menopausal age in Nigerian women. *International Journal of Gynecology & Obstetrics*, *31*(4), 341-345. https://doi.org/10.1016/0020-7292(90)90912-5

40. Vatankhah, H., Khalili, P., Vatanparast, M., Ayoobi, F., Esmaeili-Nadimi, A., & Jamali, Z. (2023). Prevalence of early and late menopause and its determinants in Rafsanjan cohort study. *Scientific Reports*, *13*(1), 1847. https://doi.org/10.1038/s41598-023-28526-y
41. Moustafa, M. F., Ali, R. R., Saied, S. F., & Tah, S. A. (2015). Impact of menopausal symptoms on quality of life among women in Qena city. *IOSR JNHS*, 4, 49.
42. Al-Musa, H. M., Ahmed, R. A., Alsamghan, A. S., Abadi, S., Al-Saleem, M. A. S., Abdu, A., ... & Alqahtani, H. A. (2017). The prevalence of symptoms experienced during menopause, influence of socio-demographic variables on symptoms and quality of life among women at Abha, Saudi Arabia. *Biomed Res*, *28*(6), 2587-95.
43. Joshi, M., & Nair, S. (2015). Epidemiological study to assess the menopausal problems during menopausal transition in middle age women of Vadodara, Gujarat, India. *Indian J Obstet Gynaecol Res*, *2*(3), 163-168.
44. Sharma, S., & Mahajan, N. (2015). Menopausal symptoms and its effect on quality of life in urban versus rural women: A cross-sectional study. *Journal of mid-life health*, *6*(1), 16-20.
45. Barsky, A. J., Peekna, H. M., & Borus, J. F. (2001). Somatic symptom reporting in women and men. *Journal of general internal medicine*, *16*(4), 266-275. https://doi.org/10.1046/j.1525-1497.2001.00229.x
46. Eberhard-Gran, M., Schei, B., & Eskild, A. (2007). Somatic symptoms and diseases are more common in women exposed to violence. *Journal of general internal medicine*, *22*, 1668-1673. https://doi.org/10.1007/s11606-007-0389-8
47. Silverstein, B. (2002). Gender differences in the prevalence of somatic versus pure depression: a replication. *American Journal of Psychiatry*, *159*(6), 1051-1052. https://doi.org/10.1176/appi.ajp.159.6.1051
48. Atasoy, S., Hausteiner-Wiehle, C., Sattel, H., Johar, H., Roenneberg, C., Peters, A., ... & Henningsen, P. (2022). Gender specific somatic symptom burden and mortality risk in the general population. *Scientific reports*, *12*(1), 15049. https://doi.org/10.1038/s41598-022-18814-4