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Menopausal Symptoms and Quality of Life Among Women in Rural and Urban Communities of North-West Nigeria

Amina MOHAMMED-DUROSINLORUN¹, Zainab Kwaru MUHAMMED-IDRIS², Oluwabunmi Idera Nimata BUHARI³, Fatima MOHAMMED-MUSA⁴

1. Department of Obstetrics and Gynaecology, Faculty of Clinical Sciences, College of Medicine, Kaduna State University, Kaduna, Nigeria
2. Department of Community Medicine, Faculty of Clinical Sciences, College of Medicine, Kaduna State University, Kaduna, Nigeria
3. Department of Behavioral Sciences, Faculty of Clinical Sciences, University of Ilorin, Ilorin, Nigeria
4. Department of Microbiology, Faculty of Clinical Sciences, College of Medicine, Kaduna State University, Kaduna, Nigeria

ABSTRACT

Introduction: Menopause is a significant life milestone in women as they age. It affects Quality of Life, causing physical, cognitive, emotional, and social challenges. The aim of this study was to document Menopausal Symptoms and Quality of Life among menopausal Women in Kaduna, Northwest Nigeria. **Materials and Methods:** This was a cross-sectional study conducted among menopausal women using questionnaires to assess socio-demographics, reproductive histories, perceptions of symptoms and quality of life. The Utian QoL questionnaire (UQoL) and menopause rating scale (MRS) were used. Data was analyzed using IBM Statistical Product and Service Solution version 26.0. **Results:** Four hundred twenty women were recruited. Total MRS score was 15.38 ± 6.02 with mean scores of 5.61 ± 2.63 somatic, 5.23 ± 2.33 psychological, and 3.56 ± 2.47 sexual domains. Sleep problems (99.8%), physical and mental fatigue (85.2%), joint and muscular pain (82.4%) and sadness (82.1%) were the commonest symptoms. Linear regression of MRS indicated significant association with pregnancies and births ($p = 0.011$ and 0.022). The overall UQOL was 85.53 ± 12.77 . Zero parity and no education were associated with lower UQOL score ($p = 0.011$ and $p = 0.001$ respectively). Marriage was associated with a greater UQOL ($p = 0.001$). Presence of Menstrual related symptoms predicted poor health and sexual UQOL. **Conclusion:** Prevalence of menstrual related symptoms was quite high and its presence predicted poor QoL. Menopausal women should receive information about symptoms, treatment options, and lifestyle adjustments from healthcare workers to improve their quality of life.

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CORRESPONDING AUTHOR

Oluwabunmi Idera Nimata BUHARI
oin.buhari@unilorin.edu.ng

1. INTRODUCTION

Menopause is a significant milestone in a woman's life, marking the natural transition from the reproductive years to a phase where fertility declines and eventually ceases [1,2]. Typically

occurring in women in their 40s or 50s, the official recognition of menopause occurs after 12 consecutive months without a menstrual period. The decline in reproductive hormones,

particularly oestrogen, is due to the loss of ovarian follicular function [1-5]. While menopause typically occurs naturally, it can also occur due to various factors such as surgical removal of the ovaries or uterus (oophorectomy or hysterectomy), cancer treatments such as chemotherapy, genetic factors, or other unknown causes [1,3].

Although menopause is not a disease, adjusting to it is multifaceted, significantly impacting the woman's quality of life (QoL). It brings both physical and cognitive changes, leading to emotional and social challenges [4-8]. Hormonal changes can result in mood disturbances like anxiety and depression, disrupt sleep, and affect emotional well-being. It can also have an impact on sexual functioning and satisfaction, leading to a decline in QoL [1,4]. Additionally, menopause brings a shift in social roles and relationships, influencing psychosocial functioning. Despite the challenges, menopause can be a time for women to grow and discover themselves, leading to increased confidence and empowerment.

The World Health Organisation (WHO) defines quality of life (QoL) as an individual's perception of their position in life in the context of the culture and value systems in which they live, as well as about their goals, expectations, standards, and concerns [9,10]. Quality of life is a subjective and multidimensional concept encompassing physical health, mental and emotional well-being, social relationships, and one's perceived purpose and fulfilment [11,9]. Understanding the QoL is a complex task, making it tricky to assess. The Patient-Reported Outcomes (P-RO) Harmonisation Group defines health-related quality of life (HRQoL) as the patients' assessment of how a health condition and its treatment affect their daily lives [11].

There has been a significant increase in the population of women aged above 60 years globally due to increasing life expectancy, and it is projected that about 1 billion women will be in the climacteric phase by 2030 [12,13], with about 76% of them in developing nations [13, 14]. These are women in the menopausal age group. By illustrating the complexities faced by menopausal women during this stage, along with the associated elements, and evaluating their quality of life, there is an increased chance of aiding public health policy development and providing appropriate interventions that enhance their overall welfare. This study sought to document the different symptom experiences and their relationship to quality of life among menopausal women in Kaduna North, in Northwest Nigeria.

2. MATERIALS AND METHODS

The study was a descriptive cross-sectional quantitative study done in Kaduna North Local Government Area (LGA), which has 12 wards and is one of the largest metropolitan LGAs in Kaduna State. The female population is 177,500 (48.7% LGA of the population), according to the 2006 census. The LGA is also highly

cosmopolitan, with two major religions, Christianity and Islam with diverse ethnic groupings. Hausa is the primary language spoken, while English is the Lingua Franca.

Study population: The study population consists of women aged 40 years and older drawn from households and workplaces within the LGA who had ceased menstruating at least 12 months before the survey and had lived in the area for at least six months. Women who declined participation and only worked but did not reside at study sites were excluded.

Sample size estimation was based on the descriptive cross-sectional study design [15],

$n = z^2 pq$, where:

$$d^2$$

n = minimum sample size, z = standard normal deviate at 95% confidence interval (1.96), p = proportion of women who attained menopause as obtained from a previous Nigerian study [16], which was 41% (0.41). q = the complementary probability of 'p', i.e. $1-p$ ($1-0.41$) = 0.59; and d = margin of error = 0.05.

$$n = (1.96)^2 \times 0.41 \times 0.59 = 371.71 = 372.$$

$$(0.05)^2$$

The population of women who have attained menopause in Kaduna North LGA was less than 10,000; therefore, finite correction was applied as follows; $nf = n$, where $1+(n)/N$. And nf = the minimum sample size when population is less than 10,000 (after finite correction) n = minimum sample size when population is greater than 10,000

N = estimate of the population of women in Kaduna North LGA (2006 Census) = 177,500 Therefore, $nf = 372 = 372/1.176 = 371.22$ (approximately 371)

$$1 + (372/177,500)$$

The anticipated non-response rate was put at 10%. An adjustment of the sample size estimate to cover the non-response rate was added to give a minimum of 408 respondents.

Sampling technique

We used a three-phase cluster sampling technique to select respondents. *Phase one:* Using a list from Kaduna North LGA, we selected six out of the 12 wards by simple random sampling through balloting, thereby designating 50% of the wards as study areas. *Phase two:* Wards were further divided into two almost equal parts using a major landmark, such as a road intersection. We used only one of the two clusters in each political ward for the study, with each half representing a cluster. Each cluster was selected using random sampling via balloting. *Phase three:* A list of all consenting, eligible women in households and workplaces located in each selected cluster was then generated. They served as possible respondents for the study.

Study instruments

The data collection instrument was a semi-structured interviewer-administered questionnaire adapted and modified from a validated tool based on similar studies carried out in Nigeria. The instrument used consisted of a questionnaire collecting data on socio-demographic variables: reproductive histories (e.g., age at menarche, history of dysmenorrhea, number of pregnancies and deliveries, and contraceptive history); symptoms experienced (e.g., somatic, psychological, urogenital); attitude towards menopause; and coping with menopause, designed by the authors. The menopause rating scale (MRS) and the Utian Quality of Life (UQoL) questionnaire were also used. The MRS was used to assess the perception of menopausal symptoms. It consists of 11 questions, each scored on a Likert scale of 0-4, where 0 is zero perception, 1 is mild, 2 is moderate, 3 is severe, and 4 is very severe; the total maximum score is 44 and the minimum score is 0. The MRS is made of three subscales: the somatic, psychological, and urogenital subscales, with maximum scores of 16, 16, and 12, respectively. The higher the score obtained, the greater the severity of the symptoms. The UQoL questionnaire is a 23-item questionnaire measuring menopause-specific QoL in four domains: occupational (items 2, 3, 6, 17, 18, 19, and 23); sexual (items 4, 5, and 14); health (items 7, 8, 9, 10, 16, 21, and 22); and emotional quality of life (items 1, 11, 12, 15, and 20). The UQoL, which is based on perception of sense of wellbeing, is scored on a 5-point Likert scale, where 1 = not true, 3 = moderately true, and 5 = very true for questions 1, 2, 3, 5, 6, 9, 10, 14, and 17–23, while questions 4, 7, 8, 11, 13, 15, and 16 are reversed as 5 = not true and 1=very true. The minimum score achievable is 23, while the maximum is 115. A higher score means a higher QoL. The scale has a Cronbach's alpha score of 0.83. The questionnaire was pre-tested in another LGA with similar characteristics, and the internal reliability was 0.8. The questionnaire was translated into Hausa and back translated to English to ensure retention of its original meaning before it was used. The questionnaire was administered to respondents, depending on which of the two versions they were most comfortable with.

Both oral and written informed consent were obtained from all eligible participants who agreed to participate in the study. Respondents who were literate were served the questionnaire after due explanations, while trained research assistants interviewed those who were not literate.

Data management

The collected data was analysed using IBM Statistical Product and Service Solution (SPSS) version 26.0. at a 95% confidence interval. Descriptive statistics such as means and standard deviations were used to summarise continuous variables, and categorical variables were done as frequencies and proportions. A chi-square test was used for associations between categorical variables, while an analysis of variance (ANOVA) was used to

compare any differences observed in quantitative variables. Logistic regression analysis was used to analyse the effects of each independent variable on the attainment of menopause.

Ethical Consideration

Ethical approval to conduct the study was obtained from the Health Research Ethics Committee (HREC) of the Kaduna State Ministry of Health and Human Services, Kaduna State. Permission was also obtained from Kaduna North LGA authorities, while community leaders and workplace authorities were notified well before the study.

3. RESULTS

A total of 420 women participated in the study. The demographic characteristics of participants are shown in Table 1. The majority of the participants were aged > 50 years (333, 79.3%), had only Qur'anic education (262, 62.4%), were Muslims (395, 94.0%), of Hausa ethnic group (307, 73.1%), married (179, 42.6%), and were petty traders (268, 63.8%).

Table 1. Demographic characteristics.

Variable (n = 420)	Frequency	Percentage
Age (years)		
40	9	2.1
> 40 – 50	78	18.6
> 50	333	79.3
Educational level		
None	15	3.6
Qur'anic only	262	62.4
Primary	73	17.4
Secondary	50	11.9
Tertiary or more	20	4.8
Religion		
Christianity	25	6.0
Islam	395	94.0
Ethnicity		
Hausa	307	73.1
Igbo	1	0.3
Yoruba	32	7.6
Others	80	19.0
Marital status		
Divorced/separated	28	6.7
Married	179	42.6
Widowed	213	50.7
Occupation		
Civil servant	35	8.3
Others	7	1.7
Petty trader	268	63.8
Housewife/unemployed	110	26.2

Table 2 shows the participants' reproductive, prior menstrual characteristics, and menopausal transitional patterns. Most were grand-multiparous (342, 81.4%) and previously had normal menstrual characteristics. Four hundred and five participants (96.4%) became menopausal naturally. Before menopause, most women initially had fewer frequent periods (201, 47.9%), shorter flow days (227, 54.0%), and lighter flow (266, 63.3%).

Table 2. Reproductive, menstrual and menopausal pattern.

VARIABLE (N=420)	FREQUENCY	PERCENT
Parity		
0	19	4.5
1 – 4	59	14.0
5 or more	342	81.4
Mean ± SD	7.73 ± 3.45	
Age at menarche (years)		
10 – 16	340	81.0
17 or more	79	18.8
Less than 10	1	0.2
Mean ± SD	14.94 ± 2.11	
Last menses (years)		
>1 – 5	143	34.0
>10	169	40.2
>5 – 10	86	20.5
1	22	5.3
Mean ± SD	10.91 ± 8.52	
Cycle regularity		
Irregular	21	5.0
Regular	399	95.0
Cycle length (days)		
Less than 24	174	41.4
More than 38	1	0.3
24 – 38	245	58.3
Menstrual flow (days)		
4 days or less	110	26.2
9 days or more	7	1.7
5 – 8	303	72.1
Menstrual volume		
Heavy	151	38.0
Light	12	2.9
Normal	257	61.1
Type of menopause		
Natural	405	96.4
Medical/Surgical menopause	15	3.6
Frequency/cycle length change		
Less frequent	201	47.9
More frequent	29	6.9
No change	190	45.2
Flow change		
Completely irregular	30	7.2
Longer	41	9.8
Shorter	227	54.0
Unsure	122	29.0
Volume change		
Heavier	59	14.0
Lighter	266	63.3
Unsure	95	22.6

As shown in Figure 1 and Table 3, the commonest symptoms found were sleep problems (419, 99.8%), physical and mental exhaustion (358, 85.2%), joint and muscular discomfort (346, 82.4%), depressive mood (345, 82.1%), and sexual problems (320, 76.2%). Table 3 also shows the severity of symptoms.

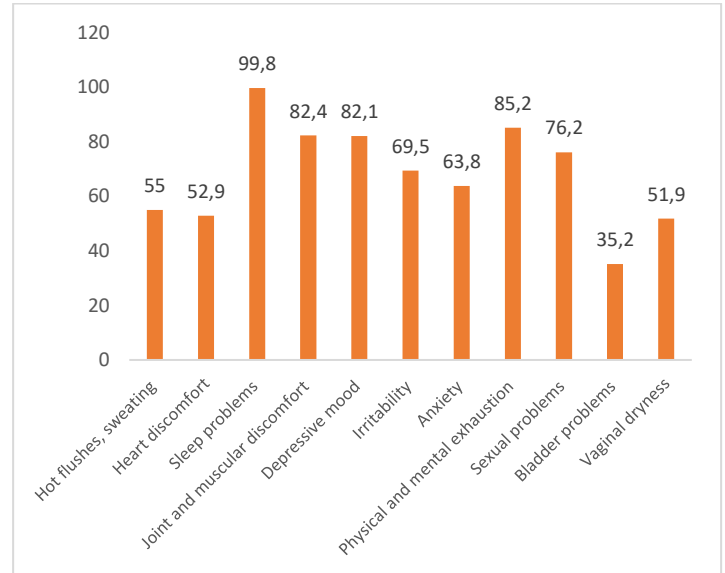


Figure 1. Frequency of Menopause Rating Scale symptoms.

As shown in Table 4, the total mean MRS score was 15.38 ± 6.02 and according to domains were somatic (5.61 ± 2.63), psychological (5.23 ± 2.33), and sexual (3.56 ± 2.47) while the overall QoL was 85.53 ± 12.77 .

Table 3. Menopause Rating Scale (MRS).

SN	Symptoms	Presence of Symptoms (Yes)	None 0	Mild 1	Moderate 2	Severe 3	Very Severe 4
Somatic							
1	Hot flushes, sweating	231(55.0)	189(45.0)	70(16.7)	100(23.8)	60(14.3)	1(0.2)
2	Heart discomfort	222(52.9)	198(47.1)	112(26.7)	99(23.6)	11(2.6)	0(0)
3	Sleep problems	419(99.8)	1(0.2)	200(47.6)	65(15.5)	132(31.4)	22(5.2)
11	Joint and muscular discomfort	346(82.4)	74(17.6)	54(12.9)	192(45.7)	93(22.1)	7(1.7)
Psychological							
4	Depressive mood	345(82.1)	75(17.9)	100(23.8)	221(52.6)	23(5.5)	1(0.2)
5	Irritability	292(69.5)	128(30.5)	157(37.4)	119(28.3)	15(3.6)	1(0.2)
6	Anxiety	268(63.8)	152(36.2)	178(42.4)	82(19.5)	8(1.9)	0(0)
7	Physical and mental exhaustion	358(85.2)	62(14.8)	63(15.0)	184(43.8)	105(25)	6(1.4)
Sexual							
8	Sexual problems	320(76.2)	100(23.8)	26(6.2)	122(29.0)	125(29.8)	47(11.2)
9	Bladder problems	148(35.2)	272(64.8)	83(19.8)	48(11.4)	16(3.8)	1(0.2)
10	Vaginal dryness	218(51.9)	202(48.1)	59(14.0)	112(26.7)	39(9.3)	8(1.9)

Table 5 shows that the linear regression of MRS scores with menstrual characteristics was only significant with parity (number of pregnancies and deliveries), with p-values of 0.011

and 0.022, respectively. Parity was associated with overall UQoL; those with zero parity had lower scores (77.53 ± 16.38 , $p = 0.011$), as was level of education, and those without education had the lowest QoL. (79.33 ± 11.93 , $p = 0.001$), while those who were married had a higher QoL (89.06 ± 11.56 , $p = 0.001$). The presence of menstrual related symptoms was significantly associated with the UQoL especially the health and sexual domains (p -value 0.001 and 0.045 respectively).

Table 4. Mean Scores of Menopause Rating Scale and Utian Quality of Life Domain Scores of Respondents.

Domains	Mean \pm SD
UQoL	
Overall UQoL	85.53 \pm 12.77
Occupational	21.29 \pm 5.61
Health	28.72 \pm 5.20
Emotional	26.25 \pm 2.91
Sexual	9.25 \pm 2.55
MRS	
Total MRS	15.38 \pm 6.02
Somatic	5.61 \pm 2.63
Psychological	5.23 \pm 2.33
Sexual	3.56 \pm 2.47

The presence of MRS symptoms predicted lower QOL (p -value = 0.001) especially in the health (p -value = 0.001) and sexual domain (p -value = 0.045) (Table 6).

Table 5. Linear Regression of MRS with Menstrual Characteristics.

Variables	Standardized coefficient	T	p-value	Pearson correlation
Number of pregnancies	0.345	2.564	0.011*	0.057
Number of deliveries	-0.310	-2.595	0.022	0.014
Menarche	-0.047	-0.942	0.347	-0.030
Cycle flow	0.041	0.843	0.400	0.036

4. DISCUSSION

Menopause can be a very trying period for women, depending on their perception of symptoms. This study sought to find out the prevalence of menopausal symptoms and the quality of life of postmenopausal women in Kaduna North. The mean age at which menarche was attained was $14.94 + 2.11$ years. This was higher than the 13.7 years, reported in a review of 67 countries by Thomas et al [17]. Socioeconomic variables are known to influence age at menarche, with majority of the women in our study were within the lower socioeconomic strata, and this may be responsible for our finding. The MRS score was 15.38 ± 6.2 ; this is slightly higher than found in a study done in Northcentral

Nigeria [18] where the mean score was 14.02 ± 0.44 . However, a Saudi Arabian study reported a mean score of 15.68 ± 6.85 [19]. The difference in MRS scores may be attributable to the subjective nature of the assessment, which relies on self-reported perceptions of the women, known to be influenced by various biopsychosocial factors as previously discussed.

Table 6. Linear Regression of MRS on UQoL.

Variables	Standardized coefficient	T	p-value	Pearson correlation
Overall UQoL	Constant	4.635	0.001*	0.135
Occupational	-0.092	-1.656	0.098	0.026
Health	0.239	3.310	0.001*	0.184
Emotional	-0.095	1.405	0.161	0.082
Sexual	0.113	2.013	0.045*	0.152

Majority of respondents had one menopausal symptom or the other, but the severity of these symptoms was mild to moderate. Olarinoye et al [18] in Northcentral Nigeria and Nisar et al [20] in Pakistan also reported mild symptoms. The top four commonest symptoms experienced in our study were sleep problems, physical and mental exhaustion, joint pain, and depression, while the severe to the most severe symptoms were sleep problems, sexual problems, physical and mental exhaustion, and joint pains. In another study from Northcentral Nigeria [18], joint pain, low libido, hot flashes, and sleep problems were the commonest symptoms. In Ibadan, Southwest Nigeria [16], a lower prevalence of symptoms was found and joint pain (59%), physical and mental exhaustion (43%), sexual problems (40.4%), and hot flashes (39%) were the commonest symptoms. In Port Harcourt, Southsouth Nigeria [21], the most common symptoms were loss of libido (92.47%), muscle pain (87.53%), joint pain (85.45%), and tiredness (80.26%), while the least common ones were mental exhaustion (56.88%), depression (50.65%), and vaginal symptoms (23.22%). The most severe symptoms were loss of libido (79.21%), urinary symptoms (40%), insomnia (28.4%), and vaginal dryness (20.22%). Another study done in Southwest Nigeria [22], comparing two ethnic groups, found joint pain as the highest experienced symptom (76.6%) and depression as the lowest (26.8%), while another one in Osogbo, Southwest Nigeria [23], found hot flashes, vaginal dryness, depression, and headache as the commonest symptoms.

Symptoms experienced by menopausal women vary depending on their biopsychosocial and environmental characteristics, such as climate, lifestyle, women’s role, and attitude towards life issues such as the end of reproductive life and this may account for the differing prevalence and severity in these studies.

The total MRS mean score was 15.38 ± 6.02 , while the mean scores for domains were: somatic (5.61 ± 2.63), psychological (5.23 ± 2.33), and sexual (3.56 ± 2.47). The highest MRS

symptoms, according to domain, were found in the somatic or vasomotor domain. The sexual domain showed the fewest symptoms, such as bladder problems and vaginal dryness, despite the frequent and severe presence of sexual (libido) problems. Olanrinoye et al [18] reported similar findings in their study. Menopausal women may experience decreases in libido, orgasm, and frequency of coitus; this is mostly a result of physiologic changes in menopause rather than depression or marital discord. Methodological differences in the design and study population, whether community- or hospital-based, may also account for the differences found in various reports on prevalence, type, and symptom severity [21]. In a large multinational survey of nine countries across four continents, Heinemann et al [26] reported that Latin America had higher total psychological and somatic scores and Asia (Indonesia) had lower scores than Europe and North America. In the same report, Latin America and Indonesia had lower urogenital scores than Europe and the US. The authors concluded that the perception of the prevalent symptoms among the respondents depends on cultural factors. For this reason, direct comparisons of MRS scores between regions are not recommended [26].

Menopausal depression has distinct mental and physical symptoms, as seen in the MRS. These symptoms fluctuate over time depending on the interplay of biological, interpersonal, sociocultural, and psychological factors, making diagnosis challenging [24]. The lack of objective tests for its diagnosis also adds to the complexity of identification [25]. The majority of the participants (82.1%) reported experiencing depressed mood, which is higher compared to the findings of Ameh et al [22], where 19.7% of Hausa women in Northern Nigeria and 34.1% of Ibo women in Southeast Nigeria reported the same. This difference could be due to variations in research methodologies, as well as cultural beliefs and customs. Several studies have indicated that having prior knowledge about menopause, maintaining a positive attitude towards menopause, and having strong social support are linked to experiencing fewer menopausal symptoms. However, this study did not investigate the cause of this phenomenon.

In this study, the overall UQoI was 85.53 ± 12.77 and this was higher than that found in New Delhi [27] (64.33 ± 9.36) but similar to the score of 91.4 ± 15.5 found in women aged 45–65 years, in a community sample in South Africa [28]. Menopause varies widely among women depending on a multitude of factors and as such leads to different perceptions of quality of life.

In our study, we observed that the occupational and health domains yielded higher scores than the health and emotional domains, while the sexual domain yielded the lowest scores. This may be explained by differences in culture and socio-demographic status. The findings, however, confirm previous literature on the negative impact of menopausal symptoms on QoL [1,5,8,26].

There is an adverse correlation between the frequencies of pregnancies (gravidity), delivery (parity) and the quality of life in postmenopausal women [8]. Our study supported this with P-value of 0.011 (number of pregnancies), and 0.022 (number of deliveries). This suggests that having several pregnancies and giving birth multiple times can lead to physical and psychological deficits, which can have a detrimental effect on quality of life, as having a larger number of children can mean heightened parental stress, more responsibilities, and financial difficulties.

In conclusion, the menopause process can span several years, potentially impacting the patient's quality of life. Our study among menopausal women in Kaduna, northern Nigeria, using the Menopause Rating Scale (MRS) and Uqol found that the most reported individual symptoms were sleep disorders, physical and mental exhaustion, joint pains, and depressive mood, while the least experienced symptom was bladder symptoms. Menstrual-related symptoms predicted lower QoL in the health and sexual domains. There is a need for healthcare providers to take into account the various elements that affect the lives of menopausal women and offer enlightenment on symptoms to expect, guidance on potential treatment approaches, and lifestyle changes to enhance their quality of life.

Limitations and strengths

Some of this data depends on the recollection of past events, which is prone to distortion and inaccuracies. A prospective longitudinal research design may provide more genuine evidence by allowing for continuous monitoring and documentation of women's experiences in real time. The main strength of this study is its reliance on community population data rather than hospital-based data, which would likely have more menopause-related complaints. Furthermore, we calculated the sample size using scientific methods.

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