



Original Researcher Article

ASSESSMENT OF MENOPAUSAL SYMPTOMS AND QOL AMONG MENOPAUSAL WOMEN IN THE NORTH GUJARAT REGION

Article History:

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Received: 10/11/2025

Revised: 25/11/2025

Accepted: 15/12/2025

Published: 28/12/2025

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Abstracts: Menopause represents a natural biological transition marked by progressive ovarian follicular depletion and declining estrogen levels. This transition typically occurs between 40 and 55 years of age worldwide, yet regional differences are well-documented. The research aims to comprehensively examine the prevalence and severity of menopausal symptoms and their impact on quality of life among menopausal women in the North Gujarat region. To assess HRQOL domains affected during menopausal transition. A community-based, cross-sectional observational study was conducted among 209 menopausal women aged 40–60 years in North Gujarat. 209 menopausal women having aged 40-60 years who provided informed consent were enrolled in the study as per the inclusion criteria. Pregnant, lactating women and not willing to participate in the study were excluded from the study. Data were collected using a structured socio-demographic questionnaire, Menopause Rating Scale (MRS) and Menopause specific quality of life (MENQOL). Data was collected, coded, entered in Microsoft Excel and analyzed using the IBM SPSS version 2.0. Descriptive statistics were used to summarize the prevalence and severity of menopausal symptoms, expressed as frequencies, percentages, mean scores, and standard deviations. A high prevalence of menopausal symptoms was observed across all MRS and MENQOL domains. The most commonly reported symptoms included joint and muscular discomfort (96%), physical and mental exhaustion (94%), vaginal dryness (92%), sexual problems (92%), and sleep disturbances (86%). Vasomotor symptoms such as hot flushes and sweating were reported by 78% of women. Psychological symptoms, including anxiety (82%) and depressive mood (78%), were also frequent. The highest mean symptom score was observed for joint and muscular discomfort (2.35 ± 1.06), indicating moderate to severe severity. Overall, menopausal symptoms significantly affected the quality of life of the participants. The severity of menopausal symptoms, as reflected by mean MENQOL scores, further reinforced the dominance of physical symptoms. The highest mean scores were observed for Feeling bloated (1.92 ± 0.85), Flatulence or gas pains (1.88 ± 0.88), Weight gain (1.79 ± 0.96), Aching in muscles and joints (1.77 ± 0.85), Feeling tired or worn out (1.65 ± 0.81). Menopausal symptoms are highly

the identical terms.

prevalent among women in North Gujarat and substantially impair physical, psychological, and urogenital aspects of quality of life. Early identification, awareness programs, and comprehensive management strategies are essential to improve health outcomes and quality of life during the menopausal transition.

Keywords: Menopause, Menopause Rating Scale, Quality of Life, Menopausal Symptoms, North Gujarat

INTRODUCTION

Menopause represents a natural biological transition marked by progressive ovarian follicular depletion and declining estrogen levels. This transition typically occurs between 40 and 55 years of age worldwide, yet regional differences are well-documented. Studies from India report an average menopausal age between 46 and 48 years, earlier than that of Caucasian populations.^[1,2] The menopausal transition, consisting of premenopause, perimenopause, and postmenopause, brings physiological, psychological, and urogenital disturbances that can influence multiple domains of women's HRQOL.

Vasomotor symptoms such as hot flushes and night sweats are among the earliest and most widely reported manifestations, occurring in up to 70–80% of women globally.^[3] Psychological symptoms— anxiety, irritability, depressive mood and decreased memory—are commonly observed during perimenopause, often due to fluctuating estrogen levels.^[4] Somatic symptoms including joint pain, fatigue, headaches, and bloating tend to increase significantly post-menopause and can negatively affect daily functioning and independence.^[5] Urogenital atrophy results in vaginal dryness, dyspareunia, recurrent urinary symptoms, and declining sexual quality of life due to estrogen deficiency.^[6]

Recent studies have emphasized wide cross-cultural variations in symptom prevalence. Asian women often report higher somatic complaints and lower vasomotor symptoms compared to Western populations.^[7] Indian women present earlier menopause and higher severity of musculoskeletal complaints as documented in recent reviews.^[8] A 2024 systematic review also identified physical inactivity, nutritional habits, and psychosocial stress as significant modifiers of menopausal symptom severity.^[9]

Despite global recognition, significant gaps in awareness and healthcare access persist. Surveys from the Royal College of Obstetricians and

Gynaecologists (RCOG) highlight that 58% of women lack access to menopause services, and most report inadequate information about menopause.^[10] Similar trends are observed in India, where menopause-related discussions remain socially limited and symptom reporting is often delayed.^[11]

Given these patterns, it is crucial to generate region-specific data from North Gujarat to inform public health policies and improve HRQOL among midlife women.

MATERIAL AND METHODS

OBJECTIVES

Primary Objective

1. To estimate the severity of menopausal symptoms among women aged 40–60 years in North Gujarat.

Secondary Objectives

2. To assess HRQOL domains affected during menopausal transition.
3. To provide recommendations for targeted health interventions for menopausal women in the region.

METHODOLOGY

Study Design and Setting

This was a community-based cross-sectional observational study conducted among women residing in selected rural and urban areas of North Gujarat.

Sample Size

A total of 209 women aged 40–60 years who fulfilled the inclusion criteria were enrolled.

Inclusion Criteria

- Women aged 40–60 years.
- Natural menopausal transition (pre-, peri-, post-menopausal stages).
- Willingness to participate and sign informed consent.

Exclusion Criteria

- Pregnant or lactating women.

- Women with surgical menopause (oophorectomy/hysterectomy).
- Those unwilling to participate.

Instrument preparation:

- The data were collected in the questionnaire including CRF (Case Report Form) and ICF (Informed Consent Form) were initially prepared in English, and then translated in the vernacular language Gujarati. Women's informed consent was taken before to collection of data. The participants failed to complete one or more questions of the study were excluded from the final analysis.

Data collection:

- A case record form was prepared to collect information from the participants. It is a self administered questionnaire, which consists of demographic details and experience of severity of symptoms and QOL were tested according to Menopause Rating Scale (MRS) and Menopause specific quality of life (MENQOL). It had been widely used in many clinical and epidemiological studies to evaluate the etiology, severity and quality of life of menopausal symptoms.
- Socio-demographic detail comprised of Age, Area, BMI, Education level, Socio-economic status, marital status, and overall knowledge regarding questions were collected. The MRS is comprised of 11 domains which are divided into three sub scales: Somatovegetative domain- Hot flushes, Heart discomfort, Sleep problems, Joint and muscular discomfort. Psychological domain- Depressive mood, Irritability (feeling nervous), Anxiety, Physical and mental exhaustion (general decrease in performance, impaired memory, decrease in concentration, forgetfulness). Urogenital domain- Sexual problems, Bladder problems, Dryness of vagina. Each symptom scored from "0 to 4", 0 being none or no complaint to 4 being very severe. The MENQOL is comprised of 29 domains which are divided into four sub scales: (1 to 3) Hot flushes, Night sweats, sweating. Psychological domain: (4 to 10)- Being dissatisfied with my personal life, Feeling Anxious, Experiencing poor memory, Accomplished less than I used, Feeling depressed, Being impatient with other people, Feeling of wanting to be alone. Physical domain: (11 to 26)- Flatulence, Aching in muscles and joints, Feeling tired or worn out, Difficulty sleeping, Aches in back of neck or head, Decreased in physical strength, decreased

in stamina, Feeling a lack of energy, Drying skin, Weight gain, Increased in facial hair, Changes in appearance, Feeling bloated, Low backache, Frequent urination, Involuntary urination when laughing or coughing. Sexual domain: (27 to 29)- Changes in sexual desire, vaginal dryness during intercourse, Avoiding intimacy. Each symptom scored from "0 to 3", 0 being not at all bothered to 3 Severe bothered. After getting approval from an expert opinion, it was subjected to a pilot study in 60 randomly selected subjects whose data were not included in the final data. Minor modifications were done in questionnaire after the completion of the pilot study. Final data collection was initiated after the pilot study; subjects were randomly enrolled in the study as per inclusion criteria. Personal interview was the method used to retrieve information from each subject.

Data analysis:

- Data was collected, coded, entered in Microsoft Excel and analyzed using the IBM SPSS version 2.0 (IBM SPSS Software, Ahmedabad, Gujarat, India). For categorical variables, data was presented as frequencies, percentages, Mean and Standard deviation. Results were described in tables.

Ethical considerations

- The protocol, study procedures along with the informed consent form (ICF) was submitted to the Institutional Research Review and Ethics Committee, Mehsana, for ethical approval prior to the commencement of the study. This study was conducted in accordance with the principles of the Helsinki Declaration and good clinical practice guidelines for studies involving human subjects.

Confidentiality:

- Collected data was kept confidential and was not being disclosed to anyone. Protected file only be accessible to authorized personnel.

RESULT

Out of total 250 women screened, 209 women were enrolled in the study with an 83.6% response rate of menopausal women. For the study, women having age of 40-65 years were enrolled in the study according to inclusion and exclusion criteria. Out of 209 women, Table 1 presents the socio-demographic profile of the **209 menopausal women** included in the study. The majority of participants belonged to the middle-aged group (45–55 years). Most women were married and resided in rural areas. A substantial proportion had primary or

secondary education, while a smaller percentage had higher educational qualifications. The majority of participants was homemakers, and most belonged to middle or lower socioeconomic strata. These findings reflect the typical demographic composition of menopausal women in semi-urban

and rural regions of North Gujarat and provide important contextual background for interpreting symptom patterns and quality-of-life outcomes. One of the facts that observed from the study, 48.8% women even does not know what is hormonal replacement therapy.

Table 1: Socio-demographic Characteristics of the Study Participants

Parameter	Frequency (N) (n=209)	Percentage (%)
North Gujarat region		
Visnagar	74	35.4
Mehsana	37	17.7
Sabarkantha	36	17.2
Banaskantha	36	17.2
Unjha	26	12.4
Area		
Urban	126	60.3
Rural	83	39.7
Age		
<50	100	47.8
>50	109	52.2
BMI		
<25	68	32.5
<30	109	52.2
<35	31	14.8
<40	1	0.5
Hemoglobin level		
<12 g/dl	146	69.9
12 to 16 g/dl	63	30.1
Education level		
Uneducated	47	22.5
Primary	79	37.8
Graduate	63	30.1
Post graduate	20	9.6
Socio economic status		
Upper class	33	15.8
Upper middle class	97	46.4
Middle	72	34.4
Lower middle class	7	3.3
Marital status		
Unmarried	6	2.9
Married	196	93.8
Widow	6	2.9
Divorced	1	0.5
Working status		
House wife	158	75.6
Doing job	45	21.5
Self-employee	6	2.9
Type of Family		
Nuclear	104	49.8
Joint and Three generation	105	50.2
Life style		
Sedentary	52	24.9

Active	157	75.1
Physical activity (Exercise or Yoga)		
1-4 times/Week	18	8.6
≥5 times/week	19	9.1
Rarely	17	8.1
Never	155	74.2
Hormonal replacement therapy		
Taking	2	1
Not taking	105	50.2
Don't know	102	48.8

Some of the women don't know what is menopause and cause of menopause. 79.9% women didn't practice meditation as part of their routine. Meditation impact or enhance their emotional and psychological symptoms of menopause. 95.7% women saying that menopause affect their health. Table 2 depicts the distribution of women across different menopausal stages. A higher proportion

(41.1%) of participants was in the **postmenopausal stage**, followed by perimenopausal and premenopausal stages. This distribution suggests that a significant number of women seek healthcare or participate in studies after the cessation of menstruation, possibly due to increased symptom severity in later stages.

Table 2: Frequency and Percentage of Menopausal stages among study participants

Parameter	Frequency (N) (n=209)	Percentage (%)
What is menopause?		
Cessation of menstrual cycle	109	52.2
Cessation of getting pregnant	01	0.5
Don't Know	99	47.4
What is the cause of your menopause?		
Hormonal change with age	87	41.6
Due to change in reproductive cycle	26	12.4
Due to disease of reproductive system	12	5.7
Don't know	84	40.2
Do you practice meditation as part of your routine?		
Exercise	15	7.2
Yoga	27	12.9
None	167	79.9
Does meditation impact or enhance your emotional and psychological symptoms of menopause?		
Yes	205	98.1
No	04	1.9
Does menopause affect your health?		
Yes	200	95.7
No	9	4.3
Had you ever consulted a doctor for menopausal symptoms?		
Yes	57	27.3
No	152	72.7
Which group do you belong to?		
Pre-menopause	67	32.1
Perimenopause	56	26.8
Post-menopause	87	41.1

Table 3: Menopause Rating Scale (MRS) domain wise prevalence and severity of Symptoms

Menopause Rating Scale Questionnaire	Response	n (%) (n=209)	Mean±SD
Hot flushes, sweating (episodes of sweating)	No Yes	47 (22) 162 (78)	1.54±1.17
Heart discomfort (unusual awareness of heartbeat, heart skipping, heart racing, tightness)	No Yes	64 (30) 145 (70)	1.06±0.90
Sleep problems (difficulty in falling asleep, difficulty in sleeping through the night, waking up early)	No Yes	29 (14) 180 (86)	1.44±0.96
Depressive mood (feeling down, sad, on the verge of tears, lack of drive, mood swings)	No Yes	46 (22) 163 (78)	1.12±0.88
Irritability (feeling nervous, inner tension, feeling aggressive)	No Yes	75 (36) 134 (64)	0.99±0.92
Anxiety (inner restlessness, feeling panicky)	No Yes	37 (17) 172 (82)	1.23±0.88
Physical and mental exhaustion (general decrease in performance, impaired memory, decrease in concentration, forgetfulness)	No Yes	12 (6) 197 (94)	1.54±0.86
Sexual problems (change in sexual desire, in sexual activity and satisfaction)	No Yes	16 (8) 193 (92)	1.54±0.88
Bladder problems (difficulty in urinating, increased need to urinate, bladder incontinence)	No Yes	18 (9) 191 (91)	1.67±0.99
Dryness of vagina (sensation of dryness or burning in the vagina, difficulty with sexual intercourse)	No Yes	15 (7) 194 (92)	1.80±0.96
Joint and muscular discomfort (pain in the joints, rheumatoid complaints)	No Yes	9 (4) 200 (96)	2.35±1.06

Overall, the findings indicate from table 3, a **high burden of menopausal symptoms** among the study participants. The highest prevalence and severity were observed for hot flushes, **joint and muscular discomfort, physical and mental exhaustion, urogenital symptoms, and sleep disturbances**. Psychological symptoms were also common, though slightly lower in severity compared to somatic and urogenital symptoms, with a gradual increase observed from premenopause to postmenopause.

Table 4: Severity of Symptoms Based on MENQOL Scores

MENQOL	Responses	N (%) (n=209)	Mean ± SD
Hot flushes or flashes	No Yes	52 (25) 157 (75)	1.32±1.00
Night sweats	No Yes	49 (23) 160 (76)	1.34±0.99
Sweating	No Yes	49 (23) 160 (77)	1.35±1.00
Being dissatisfied with my personal life	No Yes	68 (33) 141 (67)	0.90±0.76
Feeling anxious or nervous	No Yes	40 (19) 169 (77)	1.13±0.79

Experiencing poor memory	No Yes	65 (31) 144 (69)	0.92±0.76
Accomplishing less than I used	No Yes	88 (42) 121 (58)	0.72±0.72
Feeling depressed, down or Blue	No Yes	58 (28) 151 (72)	0.93±0.73
Being impatient with other people	No Yes	70 (33) 139 (67)	0.77±0.63
Feeling of wanting to be alone	No Yes	79 (38) 130 (62)	0.75±0.69
Flatulence (wind) or gas pains	No Yes	15 (7) 194 (93)	1.88±0.88
Aching in muscles and joints	No Yes	11 (5) 198 (95)	1.77±0.85
Feeling tired or worn out	No Yes	16 (8) 193 (92)	1.65±0.81
Difficulty sleeping	No Yes	36 (17) 173 (83)	1.36±0.88
Aches in back of neck or head	No Yes	16 (8) 193 (92)	1.61±0.772
Decrease in physical strength	No Yes	14 (7) 195 (93)	1.54±0.76
Decrease in stamina	No Yes	11 (5) 198 (95)	1.57±0.74
Feeling a lack of energy	No Yes	11 (5) 198 (95)	1.65±0.76
Drying skin	No Yes	26 (12) 183 (88)	1.25±0.77
Weight gain	No Yes	24 (11) 185 (89)	1.79±0.96
Increase in facial hair	No Yes	61 (29) 148 (71)	1.00±0.82
Changes in appearance, texture or tone of your skin	No Yes	83 (40) 126 (60)	0.91±0.88
Feeling bloated	No Yes	10 (5) 199 (95)	1.92±0.85
Low backache	No Yes	9 (4) 200 (96)	1.64±0.75
Frequent urination	No Yes	33 (16) 176 (84)	1.22±0.77
Involuntary urination when laughing or coughing	No Yes	91 (44) 118 (57)	0.86±0.90
changes in your sexual desire	No Yes	26 (12) 183 (88)	1.21±0.68

Vaginal dryness during intercourse	No Yes	27 (13) 182 (87)	1.31±0.79
Avoiding intimacy	No Yes	35 (17) 174 (83)	1.14±0.72

Among the **209 menopausal women** included in the study, menopausal symptoms were widely prevalent across all domains of the MENQOL scale (Table 4). A substantial proportion of participants reported experiencing **vasomotor, psychosocial, physical, and urogenital symptoms**, indicating a significant impact on health-related quality of life.

Vasomotor symptoms were commonly reported, with **hot flushes/flushes (75.1%)**, **night sweats (76.6%)**, and **excessive sweating (76.6%)** affecting a large majority of women. Psychological symptoms were also prominent; **anxiety or nervousness (80.9%)**, **depressive mood (72.2%)**, and **dissatisfaction with personal life (67.5%)** were frequently reported.

Physical symptoms showed the highest prevalence overall. Nearly all women reported **muscle and joint pain (94.7%)**, **fatigue or exhaustion (92.3%)**, **low backache (95.7%)**, and **bloating (95.2%)**, highlighting the substantial physical burden of menopause. Urogenital complaints were also common, with **vaginal dryness during intercourse (87.1%)**, **changes in sexual desire (87.6%)**, and **frequent urination (84.2%)** affecting a majority of participants.

Severity of Symptoms Based on MENQOL Scores (Table 4: Mean ± SD)

The severity of menopausal symptoms, as reflected by mean MENQOL scores, further reinforced the dominance of physical symptoms. The highest mean scores were observed for **Feeling bloated (1.92 ± 0.85)**, **Flatulence or gas pains (1.88 ± 0.88)**, **Weight gain (1.79 ± 0.96)**, **Aching in muscles and joints (1.77 ± 0.85)**, **Feeling tired or worn out (1.65 ± 0.81)**.

Vasomotor symptoms such as **hot flushes (1.32 ± 1.00)** and **night sweats (1.34 ± 0.99)** were moderate in severity but consistently present. Urogenital symptoms including **vaginal dryness (1.31 ± 0.79)** and **changes in sexual desire (1.21 ± 0.68)** contributed meaningfully to reduced quality of life. Psychological symptoms, although slightly lower in mean scores, were persistent and impactful.

DISCUSSION

The present study demonstrates that menopausal symptoms are highly prevalent and multidimensional among women in the North Gujarat region, significantly impairing health-related quality of life. Physical symptoms were the most dominant, followed by vasomotor and Urogenital complaints, a pattern consistent with findings reported in Indian and international studies from 2023-2025, reinforcing the need for region-specific intervention.

The high burden of musculoskeletal pain, fatigue, bloating, and weight gain observed in this study aligns with recent evidence suggesting that estrogen deficiency contributes to increased inflammation, altered fat distribution and musculoskeletal discomfort during menopause. Similar findings have been reported in studies from South India and other Asian populations, where physical symptoms were the leading contributors to poor MENQOL scores. ^(12, 13, 14)

Vasomotor symptoms such as hot flushes and night sweats were experienced by more than three-quarters of the study population. This prevalence is comparable to reports from global menopause surveys, including studies conducted in Asia and Europe, which document vasomotor symptoms in 60–80% of menopausal women, and with a 2024 European multicountry survey. ^(15, 16) However, the severity scores in the present study were moderate, suggesting possible cultural differences in symptom perception and tolerance.

Psychological symptoms such as anxiety, irritability, and depressive mood were frequently reported, reflecting the neuroendocrine effects of hormonal fluctuations during menopause. Similar associations between menopause and psychological distress have been reported in recent cross-sectional studies, which highlight menopause as a vulnerable period for mental well-being. ⁽¹⁷⁾

Urogenital symptoms, including vaginal dryness and reduced sexual desire, were reported by more than 85% of women. These findings are consistent with global literature describing the genitourinary syndrome of menopause (GSM) as a persistent and often under recognized contributor to poor quality

of life. ⁽¹⁸⁾ Cultural barriers and limited awareness may further exacerbate under reporting and lack of treatment for these symptoms.

The widespread prevalence and severity of menopausal symptoms observed in this study underscore the need for early screening, education, and targeted interventions at the community level. The presence of significant symptom burden even among women in the early menopausal transition highlights the importance of initiating preventive and supportive strategies at younger ages. Improving awareness about menopause, expanding access to counseling services, and integrating menopause management into primary healthcare can play a crucial role in improving HRQOL. Both hormonal and non-hormonal treatment options, lifestyle modification, and psychosocial support should be emphasized in menopause care programs.

CONCLUSION

Menopausal symptoms are highly prevalent among women in the North Gujarat region and exert a substantial negative impact on health-related quality of life, particularly in the physical and urogenital domains. These findings highlight menopause as a significant public health concern requiring comprehensive, culturally sensitive, and accessible healthcare interventions.

Acknowledgment:

The authors want to acknowledge all respondents, gynecologists and medical staff for the smooth conduction of this clinical study.

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