Original Article

Effect of Postmenopausal Symptoms on Health-related Quality of Life among Women Residing in Rural Areas of Central Gujarat and Saurashtra: A Cross-sectional Study

BHOOMI MANISHKUMAR BAVDA[1], SAPNA BHAVIN PATEL[2], ANJALI PUSHKAR TIWARI[3]

(cc) BY-NC-ND

ABSTRACT

Introduction: Menopause means permanent cessation of menstruation at the end of reproductive life. With the increase in life expectancy, women spend one-third of their life in menopausal period. Menopausal women face problems like hot flushes, feeling accomplished, poor memory, tiredness, joint pain, weak physical strength, lack of energy, avoiding intimacy, and vaginal dryness. Due to these the physical, psychosocial, and sexual health-related aspects get deteriorated.

Aim: To assess the effect of postmenopausal symptoms on health-related quality of life among women.

Materials and Methods: A cross-sectional research design was used, and 168 postmenopausal women, were selected following home visits at selected rural areas of Central Gujarat and Saurashtra, India. Women in the age group of 40-60 years, who had completed seven years of natural menopausal period were eligible for the study. The Menopause Specific Quality of Life Questionnaire was used and statistical analysis was done using Statistical Package for Social Sciences (SPSS) Version 20.0.

Results: Mean age of the postmenopausal women was 76.93 years. The majority 85 (50.6%) had completed their primary education. The most commonly found postmenopausal symptoms were feeling tired 153 (91.07%), loss of physical strength 153 (91.07%), and lack of energy 153 (91.07%). The mean score for vasomotor domain was 5.34±1.91, sexual domain 4.31±1.69, psychosocial domain 4.07±1.44, and physical domain was 3.85±1.10. The majority of the postmenopausal symptoms were related to the vasomotor domain.

Conclusion: The present study findings concluded that all domains' symptoms negatively impacted a women's quality of life. The majorly affected domain was vasomotor, while least affected was physical domain.

Keywords: Menopause specific quality of life questionnaire, Menopausal symptoms, Postmenopausal women

INTRODUCTION

The mid-forties, practically all women, regardless of their cultural background or health status, begin to encounter physical, psychological, and emotional problems. Those upheavals correspond with a gradual drop in female hormones, oestrogen and progesterone, culminating in the ovaries' complete closure, a condition known as menopause [1].

Menopausal women will number 1.2 billion by 2030, up from 467 million in 1990. Between 1990 and 2030, the number of postmenopausal women in the developing countries will quadruple. Postmenopausal women's proportion of the overall population will similarly rise, from 9% in 1990 to 14% in 2030, but this figure will eventually rise considerably higher, as developed-world proportions of over 20% in 2030 are reached globally. Nearly 2.5 million women would enter menopause every year in the 1990s, with that number expected to rise to 47 million by the 2020s [2].

Each year, roughly 1.3 million women in the United States reach menopause. Menopause usually begins between the ages of 51 and 52 years. However, between the ages of 40 and 45, roughly 5% of women experience early menopause. Furthermore, 1% of women reach menopause early, before the age of 40, due to persistent ovarian failure, which may be linked to sex genetic abnormalities [3].

According to a research, age-adjusted mortality falls by 2%, whereas the risk of uterine/ovarian cancer rises by 5% with each year of menopause [4]. As a result, investigating the numerous factors that influence menopausal age in Indian women is of utmost clinical advantage.

Women have a hard time adequately characterising physical, psychosocial, or sexual abnormalities during this time. They typically feature hot flushes, anxiety, anger/irritability, insomnia, and general exhaustion. These symptoms steadily deteriorate women's health and, as a result, their quality of life (QOL) on a daily basis [1,3]. Vasomotor symptoms affect roughly 75% of women.

Many policies and programmes are available in India for newborns, children, women, geriatrics, adolescents, and pregnant women, but there isn't a single policy or programme for middle-aged or elderly women going through menopause through which they can receive services. Studies, that focus at the impact of postmenopausal symptoms on health-related quality of life, on the needs of menopausal women are limited in rural areas of Gujarat. As a result, the present researchers decided to undertake a study to determine the intensity of menopausal symptoms as well as their impact on overall health. Furthermore, the study findings will help policy makers recognise the need of including postmenopausal women in various health plans to improve health status. The primary aim was to see how the menopausal symptoms influenced health-related quality of life.

MATERIALS AND METHODS

This cross-sectional study was conducted on postmenopausal women at Manikaka Topawala Institute of Nursing, Charusat-Changa. The study was conducted from March 2020 to July 2021. Total 168 women were recruited from five regions of Central Gujarat (Change, Tarapur) and Saurashtra (Mathak, Devadiya, Charadva)

rural areas. IEC approval was obtained from Manikaka Topawala Institute of Nursing, Charusat, Changa (letter number CHA/IEC/ADM/21/02/105). Formal administrative permission was obtained from the concerned authorities of Primary Health Centre, and Community Health Centre.

Sample size calculation: The sample size was estimated based on a pilot study conducted among 30 postmenopausal women. Formula used for sample size calculation:

$$N = \frac{SD^2}{L^2}$$

SD^2=standard deviation square

L^2=allowable error square

Inclusion criteria: Women who had attained natural menopause with a postmenopausal period of a minimum of seven years were included.

Exclusion criteria: Women who were receiving hormonal therapy, women who underwent hysterectomy, presence of medical conditions like diabetes mellitus, hypertension, cardiac disease, venous embolism, thyroid diseases, women involved in the medical and paramedical profession, and have undergone any reproductive tract obliteration-related surgeries were excluded.

Study Procedure

The women were selected using non probability consecutive sampling techniques. For data collection, a structured tool was used which was divided into three sections:

Section A (Socio-demographic variables): This included age, educational level, employment status, household income, diet, religion, types of family, marital status, number of children, duration since menopause attained in years.

Section B (Obstetric variables): Included obstetrical history, mode of last delivery, history of abortion, menstrual history included.

Section C (Menopausal related quality of life 1-month tool): The tool (MANQOL) has four domains, viz., vasomotor domain, psychological domain, physical domain, and sexual domain [5].

The investigator obtained list of postmenopausal women from Female Health Worker (FHW) and Accredited Social Health Activist (ASHA) of selected rural areas. Further, each participant who met the inclusion and exclusion criteria was contacted in person by the researcher through home visits. The purpose of the study was described to them as well a participant information sheet was given. On agreement of the participant's informed written consent data collection was done, with the help and presence of FHW or ASHA workers. Proper guidelines of COVID-19 preventive measures as prescribed and reviewed by the government were followed.

STATISTICAL ANALYSIS

Statistical analysis was done using SPSS software version 20.0. Frequency and percentage were used for demographic and obstetrical variables and also for prevalence for specific postmenopausal symptoms. Mean and standard deviation were calculated for each postmenopausal symptom and for each domain.

RESULTS

The demographic data and the number of women experiencing symptoms are shown in [Table/Fig-1,2]. The top five symptoms were sweating (5.49±2.06), hot flushes and flashes (5.42±2.17), night sweats (5.11±1.96), avoiding intimacy (4.88±2.05), feeling anxious or nervous (4.40±2.04), respectively in [Table/Fig-3].

The [Table/Fig-4] depicts the mean scores of postmenopausal symptoms where most commonly affected domain was vasomotor domain (5.34±1.91) and least affected was physical (3.85±1.10).

Sr. No.	Characteristics	Frequency (%)
	Socio-demographic variables	
1.	Age group in years	
	40-45 years	23 (13.7%)
	46-50 years	41 (24.4%)
	51-55 years	49 (29.2%)
	56-60 years	55 (32.7%)
2.	Educational level	
	No formal education	32 (19.0%)
	Primary education	85 (50.6%)
	Secondary/higher secondary education	48 (28.6%)
	Postgraduation	3 (1.8%)
3.	Employment status	
	Unemployed	142 (84.5%)
	Government sector	10 (6.0%)
	Private sector	08 (4.8%)
	Other	08 (4.8%)
4.	Household income per month	
	<10,000 Rs.	38 (22.9%)
	10,000-20,000 Rs.	109 (64.9%)
	20,001-30,000 Rs.	21 (12.5%)
5.	Diet	
	Vegetarian	153 (91.1%)
	Non vegetarian	02 (1.2%)
	Mixed	13 (77%)
6.	Religion	
	Hindu	154 (91.7%)
	Muslim	14 (8.3%)
7.	Types of family	
	Nuclear	42 (25.0%)
	Joint	110 (65.5%)
	Extended	16 (9.5%)
8.	Marital status	
	Married	153 (91.1%)
	Unmarried	02 (1.2%)
	Widow	13 (7.7%)
9.	Number of children	
	0	09 (5.3%)
	1	16 (9.5%)
	2	67 (39.9%)
	3	45 (26.8%)
	More than 3	31 (18.5%)
10.	Menopausal since (years)	
	7-10	67 (39.9%)
	11-14	54 (32.1%)
	15-18	41 (24.4%)
	>18	06 (3.6%)
	Obstetric variables	
11.	Obstetrical history	
	A. Given childbirth	
	Yes	159 (94.6%)
	No	9 (5.4%)
	B. Year of last delivery	
	Not applicable	09 (5.36%)
	>1980	3 (1.8%)
	1980-1990	42 (25%)
	1991-2000	74 (44.04%)
	>2000	40 (23.8%)
	C. Period of gestation of last pregnancy	

Not applicable		09 (5.3%)
≤27 weeks		08 (4.8%)
28-38 weeks		65 (38.7%)
>38 weeks		86 (51.2%)
D. Health status of mother after last delivery		
Not applicable		09 (5.3%)
Good		136 (81%)
Poor		23 (13.7%)
12.	Mode of last delivery	
	Not applicable	09 (5.36%)
	Normal vaginal delivery	113 (67.26%)
	Assisted vaginal delivery	35 (20.83%)
	C-section	11 (6.55%)
13.	History of abortion	
	Not applicable	09 (5.36%)
	No	116 (69.04%)
	Yes	43 (25.6%)
14.	Menstrual history	
	A. Age of menarche	
	<12	9 (5.4%)
	12-14	64 (38.1%)
	15-17	81 (48.2%)
	>17	14 (8.3%)
	B. Cycle length	
	<28 days	9 (5.4%)
	28-32 days	119 (70.8%)
	>32 days	40 (23.8%)
	C. Regularity	
	Regular	106 (63.1%)
	Irregular	62 (36.9%)
	D. Days of flow	
	<3 days	26 (15.5%)
	3-5 days	29 (17.3%)
	>5 days	113 (67.3%)
	E. Number of pads changed/day	
	<2 pads	19 (11.3%)
	2-3 pads	59 (35.1%)
	>3 pads	90 (3.6%)
	F. Associated symptoms	
	i. Back pain	
	Yes	134 (79.8%)
	No	34 (20.2%)
	ii. Bloating	
	Yes	109 (64.9%)
	No	59 (35.1%)
	iii. Bowel issues	
	Yes	99 (58.9%)
	No	69 (41.1%)
	iv. Breakouts	
	Yes	88 (52.4%)
	No	80 (47.6%)
	v. Cramps in abdomen	
	Yes	102 (60.7%)
	No	66 (39.3%)
	vi. Fatigue	
	Yes	96 (57.1%)
	No	72 (42.9%)
	vii. Headache	
	Yes	85 (50.6%)

No		83 (49.4%)
viii. Lower back pain		
Yes		117 (69.6%)
No		51 (30.4 %)
ix. Lower abdominal pain		
Yes		123 (73.2%)
No		45 (26.8%)
x. Mood swing		
Yes		116 (69%)
No		52 (31%)
xi. Trouble sleeping		
Yes		122 (72.6%)
No		46 (27.4%)

[Table/Fig-1]: Findings related to demographic and obstetrical variables of postmenopausal women (N=168).

Sr. No.	Menopausal symptoms	Frequency	Percentage
1.	Hot flushes and flashes	142	84.52%
2.	Night sweats	147	87.50%
3.	Sweating	148	88.10%
4.	Dissatisfaction with my personal life	134	79.76%
5.	Feeling anxious	137	81.55%
6.	Poor memory	146	86.90%
7.	Accomplishing less than I used to	147	87.50%
8.	Feeling depressed	143	85.12%
9.	Being impatient with other people	144	85.71%
10.	Feelings of wanting to be alone	126	75.00%
11.	Flatulence (wind) or gas pains	136	80.95%
12.	Aching in muscles and joints	147	87.50%
13.	Feeling tired	153	91.07%
14.	Difficulty sleeping	137	81.55%
15.	Aches in back of neck or head	141	83.93%
16.	Decrease in physical strength	153	91.07%
17.	Decrease in stamina	152	90.48%
18.	Lack of energy	153	91.07%
19.	Dry skin	150	89.29%
20.	Weight gain	134	79.76%
21.	Increased facial hair	142	84.52%
22.	Changes in appearance, texture, or tone of my skin	148	88.10%
23.	Feeling bloated	150	89.29%
24.	Low backache	150	89.29%
25.	Frequent urination	131	77.98%
26.	Involuntary urination when laughing and coughing	138	82.14%
27.	Decrease in sexual desire	141	83.93%
28.	Vaginal dryness	145	86.31%
29.	Avoiding intimacy	147	87.50%

[Table/Fig-2]: Findings related to the prevalence of specific postmenopausal symptoms (N=168).

Sr.No.	Menopausal symptoms	Mean±SD
1.	Hot flushes and flashes	5.42±2.17
2.	Night sweats	5.11±1.96
3.	Sweating	5.49±2.06
4.	Dissatisfaction with my personal life	4.05±1.92
5.	Feeling anxious or nervous	4.40±2.04
6.	Poor memory	4.05±1.69
7.	Accomplishing less than I used to	4.31±1.69
8.	Feeling depressed, down, or blue	4.05±1.83

9.	Being impatient with other people	4.06±1.72
10.	Feelings of wanting to be alone	3.54±1.87
11.	Flatulence (wind) or gas pains	3.96±2.04
12.	Aching in muscles and joints	4.04±1.73
13.	Feeling tired or worn out	4.18±1.69
14.	Difficulty sleeping	3.90±1.86
15.	Aches in back of neck or head	3.80±1.65
16.	Decrease in physical strength	4.03±1.51
17.	Decrease in stamina	4.18±1.56
18.	Lack of energy	4.19±1.56
19.	Dry skin	3.84±1.60
20.	Weight gain	3.54±1.77
21.	Increased facial hair	3.43±1.61
22.	Changes in appearance, texture, or tone of my skin	3.71±1.59
23.	Feeling bloated	4.01±1.67
24.	Low backache	3.75±1.57
25.	Frequent urination	3.49±1.74
26.	Involuntary urination when laughing and coughing	3.46±1.60
27.	Decrease in my sexual desire	3.83±1.74
28.	Vaginal dryness	4.21±1.79
29.	Avoiding intimacy	4.88±2.05

[Table/Fig-3]: Findings related to MANQOL items score among postmenopausal women. (N=168).

Postmenopausal Symptoms Domain	Mean±SD
Vasomotor Domain	5.34±1.91
Psychosocial Domain	4.07±1.44
Physical Domain	3.85±1.10
Sexual Domain	4.31±1.69

[Table/Fig-4]: Finding related to mean score of postmenopausal symptoms on HRQOL domains among postmenopausal women (N=168).

DISCUSSION

The aim of the present study was to see how the postmenopausal symptoms affected women's health-related quality of life. The study found that postmenopausal symptoms have a detrimental impact on women's health-related quality of life in rural parts of Gujarat's Central and Saurashtra regions. The Menopausal Related Quality of Life tool was used. According to the findings, the study population experienced symptoms majorly in the vasomotor and sexual domains.

The [Table/Fig-5] [6-16] shows that majority of the researches had used MANQOL tool to assess postmenopausal symptoms. The average sample size was above 100 and a larger group of postmenopausal women were 45-50 years old. Those women who were illiterate suffered physical symptoms. Few studies reported that rural women suffered more vasomotor and sexual domain symptoms compared to urban area. The studies report that majority of these women feel tired, have ache in muscles and back, suffer from decreased physical strength, have poor memory, have vaginal dryness and avoid intimacy.

Limitation(s)

The present research study is limited to a particular sample population, and the outcomes may not be generalised.

CONCLUSION(S)

The study concluded that the postmenopausal women had a reduced quality of life. The main reason for deteriorated quality of life is due to lack of awareness and inappropriate follow-up. A comparative study need to be conducted among perimenopausal women and postmenopausal women, or compare rural vs urban women.

There is a need to develop an educational and training module for postmenopausal women in order to improve their quality of life or design a structured counselling session to provide coping mechanism. The present research finding could be used for effective policy making and development of programs regarding welfare of postmenopausal women.

Author name, year, study place	Study tool	Sample size, mean age and literacy rate	Most common (three) symptoms
Yerra AK et al., 2021, Hyderabad [6]	Menopause related quality of life questionnaire (MANQOL)	Sample size-378. Mean age-56.81. 71.7% illiterates.	Feeling wanting to be alone (97.1%), vaginal dryness during intercourse (95.5%), accomplishing less than I used to (92.9%)
Kang HK et al., 2021 Punjab [7]	Menopause related quality of life questionnaire (MANQOL)	Sample size-150. Mean age was 59.81±10.10 years, age of attaining menopause ranged from 36-58 years. 66.7% illiterates.	Avoiding intimacy (93.3%), decrease in my sexual desire (91.3%), ache in muscles and joints (88.7%)
Sivapragasam R et al., 2020, Rural Puducherry [8]	Menopause related quality of life questionnaire (MANQOL)	Sample size-172. Majority (63%) were 60-74 years old. 70% illiterates.	Feeling lack of energy (85.4%), decreased stamina (84.8%), decrease in physical strength (82.5%)
Smail L et al., 2020, Dubai [9]	Menopause related quality of life questionnaire (MANQOL)	Sample size-70. Majority of 75.7% were 50-64 years old. 27.1% were completed primary education	Aches in back, neck or head (58.5%), aches in the muscles and joints (57.2%), low backache (52.8%)
Patil SD et al., 2019, Nagpur [10]	Menopausal rating scale	Sample size-288. Majority (29.86%) were 40-44 years old. 23.26% literates.	Joint and muscular discomfort (77.77%), physical and mental exhaustion (51.51%), heart discomfort (32.63%)
Prajapati LM et al., 2018, Nepal [11]	Menopause related quality of life questionnaire (MANQOL)	Sample size-119, 59.5% were majorly 56-60 years old, 90.5% were illiterates	Accomplishing less than I used to (94.8%), aching in muscles and joints (94.8%), decreased in physical strength (94.8%)
Senthilvel S et al., 2018, Kochi [12]	Menopause related quality of life questionnaire (MANQOL)	Sample size-150. Majority (34%) were 55-59 years old. 46% literates	Decrease in my sexual desire (98.7%), avoiding intimacy (97.3%), aching in muscle and joints (90.7%)
Ganapathy T and Al Furaikh SS, 2018, Bangalore South, Karnataka [13]	Menopause related quality of life questionnaire [MANQOL]	Sample size-140. 95% were literates	Low backache (96%), decrease in physical strength (92%), feeling tired or worn out (89%)
Karmakar N et al., 2017, Rural area of West Bengal [14]	Menopause related quality of life questionnaires (MANQOL)	Sample size-100. Majority (39%) were 46-50 years old. 67% illiterates	Feeling tired or worn out (93%), decreased in physical strength (93%), feeling lack of energy (93%)
Mohamed HA et al., 2014, Mukkaramah-Saudi Arebia [15]	Menopause related quality of life questionnaires (MANQOL)	Sample size-90. Majority (62%) were 40-<50 years old. 19% illiterates	Experiencing poor memory (48.3%), feeling dissatisfied with personal life (44.8%), low backache (41.9%)
Poomalar GK and Arounassalame B, 2013, Puducherry [16]	Menopause related quality of life questionnaires (MANQOL)	Sample size-500. Majority 25.8% were 46-50 years old. 57.2% literate	Low backache (79%), ache in muscle and joints (77.2%), feeling tired and worn out (72%)
Bhoomi M et al., 2021, Central Gujarat & Saurashtra	Menopause related quality of life questionnaires (MANQOL)	Sample size-168. Majority 32.7% were 56-60 years old. 19% illiterates	Feeling worn out or tired (91.07%), decrease in physical strength (91.07%), lack of energy (91.07%)

[Table/Fig-5]: compilation of similar published studies [6-16].

REFERENCES

[1] El Hajj A, Wardy N, Haidar S, Bourgi D, Haddad ME, Chammas DE, et al. Menopausal symptoms, physical activity level and quality of life of women living in the Mediterranean region. PloS One. 2020;15(3):e0230515.

[2] Hill K. The demography of menopause. Maturitas. 1996;23(2):113-27.

[3] Peacock K, Ketvertis KM, Doerr C. Menopause (Nursing). StatPearls Publishing. 2022.

[4] Ossewaarde ME, Bots ML, Verbeek AL, Peeters PH, van der Graaf Y, Grobbee DE, et al. Age at menopause, cause-specific mortality and total life expectancy. Epidemiology. 2005:556-62.

[5] Hilditch JR, Lewis J, Peter A, van Maris B, Ross A, Franssen E, et al. A menopause-specific quality of life questionnaire: Development and psychometric properties. Maturitas. 1996;24(3):161-75.

[6] Yerra AK, Bala S, Yalamanchili RK, Bandaru RK, Mavoori A. Menopause-related quality of life among urban women of Hyderabad, India. Journal of Mid-life Health. 2021;12(2):161.

[7] Kang HK, Kaur A, Dhiman A. Menopause-specific quality of life of rural women. Indian Journal of Community Medicine: Official Publication of Indian Association of Preventive & Social Medicine. 2021;46(2):273.

[8] Sivapragasam R, Rajini S, Rajalakshmi S, Priyanga K, Rajesh V, Priyadharshini R, et al. A community-based cross-sectional study about the quality of life in postmenopausal women in rural Puducherry. Indian Journal of Community Medicine: Official Publication of Indian Association of Preventive & Social Medicine. 2020;45(1):96.

[9] Smail L, Jassim G, Shakil A. Menopause-specific quality of life among Emirati women. International Journal of Environmental Research and Public Health. 2020;17(1):40.

[10] Patil SD, Deshmukh JS. Prevalence and pattern of menopausal symptoms among menopausal women in central India: A community based cross-sectional study. Galore International Journal of Health Sciences & Research. 2019;4(3):60-65.

[11] Prajapati LM, Shrestha GK, Sanjel S. Quality of life of menopausal women in Majhifeda VDC, Kavrepalanchok, Nepal. Kathmandu Univ Med J. 2018;64(4):311-16.

[12] Senthilvel S, Vasudevan S, Anju PS, Sukumaran A, Sureshbabu J. Assessment of symptoms and quality of life among postmenopausal women in a tertiary care hospital in Kochi, South India: A hospital-based descriptive study. Journal of Mid-life Health. 2018;9(4):185.

[13] Ganapathy T, Al Furaikh SS. Health-related quality of life among menopausal women. Archives of Medicine and Health Sciences. 2018;6(1):16.

[14] Karmakar N, Majumdar S, Dasgupta A, Das S. Quality of life among menopausal women: A community-based study in a rural area of West Bengal. Journal of Mid-life Health. 2017;8(1):21.

[15] Mohamed HA, Lamadah SM, Zamil LG. Quality of life among menopausal women. International Journal of Reproduction, Contraception, Obstetrics and Gynecology. 2014;3(3):552-61.

[16] Poomalar GK, Arounassalame B. The quality of life during and after menopause among rural women. Journal of Clinical and Diagnostic Research: JCDR. 2013;7(1):135.

PARTICULARS OF CONTRIBUTORS:
1. Student, Department of M.Sc. Nursing (OBG), Manikaka Topawala Institute of Nursing, Charusat, Changa, Anand, Gujarat, India.
2. Assistant Professor, Department of Obstetrics and Gynaecological Nursing Manikaka Topawala Institute of Nursing, Charusat, Changa, Anand, Gujarat, India.
3. Assistant Professor and Head, Department of Obstetrics and Gynaecological Nursing, Manikaka Topawala Institute of Nursing, Charusat, Changa, Anand, Gujarat, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:
Bhoomi Manishkumar Bavda,
Student, M.Sc. Nursing (OBG), Manikaka Topawala Institute of Nursing,
Anand, Gujarat, India.
E-mail: bhoomi19mnog001@charusat.edu.in; 19mnog001@charusat.edu.in

AUTHOR DECLARATION:
• Financial or Other Competing Interests: None
• Was Ethics Committee Approval obtained for this study?   Yes
• Was informed consent obtained from the subjects involved in the study?   Yes
• For any images presented appropriate consent has been obtained from the subjects.   NA