



Morbidity Patterns Among Menopausal Women in Rural Area of Chargawan Block of Gorakhpur.

(Dr. Shalini Singh¹, Dr. Indu Rana², Dr. Kavita Baranwal³, Dr. D.K. Srivastava⁴)

(Assistant Professor¹, Junior Resident², Associate Professor³, Professor & Head⁴)

(Deptt. Of Community Medicine, BRD Medical College, Gorakhpur, Uttar Pradesh, INDIA.),

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ABSTRACT:

Objectives- To study the morbidity patterns among menopausal women in rural area.

Study design- A Cross-sectional study.

Study settings- Chargawan block in Gorakhpur District, Uttar Pradesh.

Study subjects- Women of age group 40-55 years in the menopausal transition or post-menopausal phase of their life residing in rural areas of chargedawan block.

Study period- 1st August 2021 to 31st July 2022.

Study variable- Vasomotor symptoms, Musculoskeletal symptoms, Psychosocial disorders, Neurosensory symptoms.

Results: A cross-sectional epidemiological study was carried out in the rural area of Chargawan block of district Gorakhpur. 44.4% of women were in a menopausal transition phase and 55.6% of women were in the Postmenopausal phase. The prevalence of vasomotor symptoms viz. Hot flashes and Sweating was more in the menopausal transition group than in the postmenopausal group. The prevalence of Gastrointestinal symptoms was more in the post-menopausal group. A higher percentage of post-menopausal women complained about musculoskeletal symptoms in comparison to women of the menopausal transition group. Diabetes mellitus was more prevalent in postmenopausal women while hypothyroidism was more prevalent in the menopausal transition group. Among urogenital symptoms loss of libido was found the major symptom followed by vaginal dryness and burning micturition. Among psychosocial symptoms feeling tired and having poor memory was mostly complained by the postmenopausal group while the symptom of feeling depressed or sad was mostly seen in the menopausal transition group. Participants complaining of hair fall, brittle nails, and dryness of skin mostly belonged to postmenopausal group. Among neurosensory symptoms, headache was the major symptom followed by decreased vision in both groups.

Conclusion: Majority of the menopausal women suffered from physical problems. Quality of life

declines gradually as women enter menopause owing to the various problems associated with estrogen deficiency and ageing which adds to their morbidities. Lifestyle modifications, awareness programs, and Family and community support will be beneficial among women in menopausal transition to reduce the morbidity later in postmenopausal stage.

Key Word: Morbidity patterns, Menopausal transition, Postmenopausal.

I. INTRODUCTION

The term hormone was coined in the early 1900s. Ernest Starling along with William Bayliss investigated pancreatic secretions and discovered secretin and proposed many secretin-like substances being produced in the human body. He coined the term hormone for these secretin-like substances.¹ Subsequently, various hormones have been identified and studied in detail viz. growth hormones, thyroid hormones, parathyroid hormones, Luteinizing Hormone (LH), estrogen, progesterone, insulin, etc. Though produced in very minute quantities these hormones are life-essentials. Along the same line female hormones play a central role in women's life. Their rise triggers puberty allowing them to experience motherhood's joy and ensure cardioprotective functions and bone health.^{2,3} However, after their mid-forties, almost all women, irrespective of their cultural background and health conditions begin to experience physical, psychological, and emotional disturbances⁴ because of progressive endocrinologic decline in hormone levels that takes a reproductive-aged woman from regular cyclic menses to her final menstrual period ovarian senescence and beyond.⁵

The literal definition of "Menopause" is the end of the cycle of monthly menstrual bleeding (meno=month, pause=to end)⁶. The **World Health Organization** defines natural menopause as the permanent cessation of menstruation resulting from the loss of ovarian follicular activity without an obvious intervening cause and is confirmed only after 12 consecutive months of amenorrhea. In



general, natural menopause occurs between 45 and 55 years of age.⁷ Smoking advances the age of menopause by approximately 2 years.⁵

Menopausal transition (MT), often referred to as perimenopause or climacteric, refers to the late reproductive years, usually the late 40s to early 50s. The reproductive aging with loss of follicular activity progresses within a wide range (42 to 58 years) average age at its onset is 47 years, and MT length was found in the multi-ethnic Study of Women Across the Nation (SWAN) to range from 4 to 8 years. MT lasted longer in women who had earlier transition onset and in those who smoked. Characteristically, MT begins with the menstrual cycle irregularity and extends to 1 year after permanent cessation of menses.⁵

The hypoestrogenic state heralded by the onset of menopause affects various organ systems of the body. These effects can be classified with respect to the time since menopause as immediate (vasomotor symptoms, mood swings, insomnia, urinary symptoms, cognitive dysfunction, and sexual dysfunction), intermediate (genital atrophy, skin changes, urodynamic effects, and pelvic organ prolapsed) and long-term (cardiovascular effects, osteoporosis, and dementia).⁸ A Woman transitioning through midlife may be experiencing many adjustments with family and work life. Bothersome menopausal symptoms may only add to this burden and discomfort.⁹

This study aimed to investigate sociodemographic determinants and the patterns of morbidity among menopausal women and compare the morbidity patterns among the menopausal transition group and post-menopausal women.

II. MATERIAL AND METHODS

Definitions

- 1.) **Menopause:** Cessation of menses for a period of 12 months or more in a woman aged 40 years or above.⁵
- 2.) **Menopause transition:** Includes women with irregular menstrual cycles, either the interval between cycles may be altered by 7 or more days, or two or more skipped cycles, and at least one intermenstrual interval of 60 days or more⁵

Inclusion Criteria

- 1.) Menopausal women aged 40-55yr who give written consent to participate in the study.
- 2.) Menopausal women available at the site of study belonging to that specific area.

Exclusion Criteria

- 1) Menopausal women who are not willing to give consent to participate in the study.
- 2) Menopausal women with a known history of surgical hysterectomy or any kind of hormonal therapy.

The present cross-sectional study was conducted among the menopausal transition group and postmenopausal group women of age group 40-55 years, residing in Chargawan block of district Gorakhpur. Sample size estimation is based on the census of India 2011 where the prevalence of vasomotor symptoms among menopausal women is 60.7%. Therefore taking the prevalence of vasomotor symptoms 60.7%, allowable error of 5% and 95% Confidence Interval Sample size was calculated by using Cochran's formula. A sample size of 367 was obtained. Considering 10% of nonresponse rate, a total of 403 was taken. Chargawan block has one block level PHC and 4 additional PHCs. Chargawan PHC has been selected randomly. It has 7 subcentres. Out of these seven subcentres, 2 subcentres i.e. Narayanpur and Harsewakpur No. 2, were selected randomly using the lottery method. Further from these two subcentres, 2 villages from each subcentres were selected randomly by using lottery method. Finally, the 4 villages i.e. Karmaha tola, Umarpur tola, Chauhan tola, and Musalman tola were chosen. From each village, a list of all menopausal women of age group 40 years to 55 years of age was prepared, with their names and address by house-to-house visit. A list of 403 participants as a sample population was prepared (78 participants from Karmaha, 153 participants from Umarpur tola, 65 participants from Chauhan tola, and 107 from Musalman tola). Out of these 403 women, 14 women were having a history of hysterectomy therefore they were excluded from the list. Now, the rest of the participants (389) were informed about the purpose of the study and informed written consent was obtained in local language (Hindi) from the participants. Out of these 389 participants, 4 participants were not willing to give consent therefore excluded from this study. Total of 385 eligible participants were included in the study, consisting of 171 women in the menopausal transition and 214 women in the post-menopausal group. Each participant of the sample population was directly interviewed with the help of a predesigned, pretested questionnaire. Digital BP machine for measurement of blood pressure. Stadiometer for the measurement of height with accuracy up to 0.5cm. Electronic weighing machine for measurement of weight having 0.1kg



accuracy. Data obtained were entered into the Microsoft Office Excel sheet. Data was analysed and

the appropriate statistical test was applied.

III. RESULTS

Table 1- Distribution of study participants according to their socio-demographic profile (N=385):

VARIABLES		MENOPAUSAL TRANSITION N=171, (n%)	POST- MENOPAUSAL N=214, (n%)
Sociodemographic Factors			
Age	40-43	81(47.4)	26(12.1)
	44-47	62(36.3)	64(29.9)
	48-51	22(12.9)	48(22.4)
	52-55	6(3.5)	76(35.5)
	Mean±S.D	43.94±3.48	48.89±4.74
Religion	Hindu	157(91.8)	189(88.3)
	Muslim	14(8.2)	25(11.7)
Caste	General	10(5.8)	6(2.8)
	OBC	83(48.5)	84
	SC/ST	78(45.6)	124(57.9)
Education of participants	Illiterate	120(70.2)	168(78.5)
	Primary school	13(7.6)	19(8.9)
	Middle school	18(10.5)	21(9.8)
	High school	3(1.8)	5(2.3)
	Intermediate	9(5.3)	-
	Graduate/Postgraduate	8(4.7)	1(0.5)
Occupation of Participants	Housewife	149(87.1)	158(73.8)
	Skilled	4(2.3)	12(5.6)
	Semi-Skilled	9(5.3)	7(3.3)
	Unskilled	6(3.5)	35(16.4)
	Others	3(1.8)	2(0.9)
Marital Status	Unmarried	1(0.6)	-
	Married	159(93)	189(88.3)
	Widow	11(6.4)	25(11.7)
Type of Family	Nuclear	116(67.8)	113(52.8)
	Joint	55(32.2)	101(47.2)
Socio-economic status	Upper class (I) (≥ 7863)	1(0.6)	2 (0.9)
	Upper middle class(II) (3931-7862)	5(2.9)	9(4.2)
	Middle class (III) (2359-3930)	16(9.4)	7(3.3)
	Lower middle class(IV) (1179-2358)	68(39.8)	84(39.3)
	Lower class(V) (≤ 1179)	81(47.4)	112(52.3)
Mean age of menopause	Mean±S.D	NA	46.31±1.86.

Table 1- Shows the sociodemographic distribution of study participants. The mean age of the menopausal transition group was **43.94±4.74**, and the postmenopausal group was **48.89±3.48**. The mean age at which menopause was attained was **46.31±1.86**. The majority of participants in both

groups belonged to the Hindu religion and were illiterate. Among both groups most of the women were married, housewives and belonged to nuclear families. Only one unmarried woman was found in the menopausal transition group. Maximum women in the menopausal transition 81(47.4%) and



postmenopausal group 112(52.3%) were from the lower socioeconomic class. (Socio-economic classification was according to Modified B. G.

Prasad classification, taking All India Consumer Price Index of May 2021 as 119.6)

Table 2: Distribution of participants according to their Personal history and anthropometric measurements (BMI)

Participants characteristics		Menopausal transition (MT) N=171(n%)	Post-menopausal (PM) N=214(n%)
Age of Menarche	12-14	99(57.9)	138(64.5)
	15-17	72(42.1)	76(35.5)
	Mean ± S. D	14.18±1.34	13.87±1.32
Parity	0	4(2.3)	3(1.4)
	1-2	31(18.1)	16(7.5)
	3-4	42(24.6)	44(20.6)
	>5	94(55.0)	151(70.6)
Addiction	Yes	50(29.2)	60(28.0)
	No	121(70.8)	154(72.0)
Dietary habits	Occasional Non-vegetarian	96(56.1)	136(63.6)
	Regular Non-vegetarian	56(32.7)	53(24.8)
	Vegetarian	19(11.1)	25(11.7)
BMI	<18.5	13(7.6)	15(7.0)
	18.50-24.99	66(38.6)	92(43.0)
	25-29.99	47(27.5)	86(40.2)
	>30	45(26.3)	21(9.8)
	Mean± S. D	26.49±5.47	25.18±4.58
Exercise	Yes	30(17.5)	76(17.7)
	No	141(82.5)	138(83.3)

Table 2: Shows the distribution of participants according to their personal history and anthropometric measurements (BMI). Most of the women in the menopausal transition group and postmenopausal group attained menarche at the age of 12-14 years. Majority of women 121 (70.8%) in the transition group and 154 (72%) postmenopausal women were not found to be addicted to any kind of agents. Both in the menopausal transition group and postmenopausal group women were taking nonvegetarian diet occasionally **Vegetarian-** Pure vegetarian +non vegetarian taking a non-vegetarian diet in more than one month. **Non-Vegetarian occasional** -Taking a non-vegetarian diet weekly, fortnightly, or

monthly.**Non-vegetarian regular-** Taking a non-vegetarian diet twice in a week. Participants who use to walk for at least 30 minutes,5 days a week were taken in “Yes” category of exercise Very few participants 17.5% in menopausal transition and 17.7% in postmenopausal were doing exercise. According to the parity majority of women in menopausal transition group 94 (55.0%) were having more than 5 children. According to the BMI majority of women i.e. 66(38.6%) and 92(43%) respectively in both the groups were having BMI of the normal range.WHO international classification of BMI (Quetlet’s Index)was used to calculate BMI.

**Table 3- Distribution of participants according to their morbidity patterns:**

Morbidity Patterns:		Transition n=171, n (%)	Postmenopausal n=214, n (%)
Vasomotor Symptoms	Hot flashes	85(49.7)	44(20.6)
	Sweating	94(55.0)	113(52.8)
	Insomnia	50(29.2)	104(48.6)
Respiratory	Bronchial asthma	4(2.3)	5(2.3)
	COPD	1(0.6)	-
CVS	Coronary artery disease	-	3(1.4)
	Hypertension	64(37.4)	95(44.4)
GIT	Heartburn, acidity	57(33.3)	82(38.3)
	Flatulence	65(38.0)	108(50.5)
	Constipation	29(17.0)	66(30.8)
Musculoskeletal	Low backache	69(40.4)	167(78.0)
	Pain in the posterior surface of the neck	78(45.6)	44(20.6)
	Muscle/ joint pain	85(49.7)	174(81.3)
Endocrine disorders	Diabetes Mellitus	34(19.9)	51(23.8)
	Hypothyroidism	16(9.4)	14(6.5)
Urogenital disorder	Urinary incontinence	21(12.3)	29(13.6)
	Burning Micturition	25(14.6)	36(16.8)
	Vaginal dryness	17(9.9)	63(29.4)
	Vaginal discharge	9(5.3)	9(4.2)
	Loss of libido	21(12.3)	64(29.9)
Psychosocial	Feeling depressed/sad	82(48.0)	69(32.2)
	Feeling tired/worn out	78(45.6)	118(55.1)
	Poor memory	29(17.0)	46(21.5)
Skin/nails/hair	Dryness of skin	29(17.0)	52(24.3)
	Brittle nails	44(25.7)	56(26.2)
	Hair fall	78(45.6)	89(41.6)
	Pallor	116(67.8)	147(68.7)
Neurosensory	Headache	71(41.5)	144(67.3)
	Decreased vision	44(25.7)	123(57.5)
	Impaired hearing	11(6.4)	25(11.7)

Table 3-Shows the distribution of the morbidity patterns among both menopausal groups. Among vasomotor symptoms, sweating was the most common symptom observed by 94(55%) women in the transition group followed by hot flashes 85(49.7%) and insomnia seen in 50 (29.2%). In postmenopausal women, the most common symptom was sweating seen in 113 (52.8%) followed by insomnia in 104 (48.6%) and hot flashes seen in 44 (20.6). Among the Neurosensory symptoms, headache was most common complaint i.e. 71(41.5%) in the transition group and 144(67.3%) in the post-menopausal group.

IV. DISCUSSION

In the present study, morbidity patterns in menopausal women were explored. A total of 385 women were studied over a period of one year out of which 171(46%) were in the menopausal transition and 214(54%) were in the postmenopausal group. The mean age at which menopause was attained was 46.31 ± 1.86 which was almost similar to the finding of Indian menopausal society i.e. 46 years. Certain socioeconomic factors like education, occupation, socioeconomic status, age at marriage, parity were recognized risk factors for the widely prevalent morbidities in menopausal women. Women from lower socioeconomic strata



are limited in their ability to deal with morbidities effectively because of limited access to resources and they did not report their condition or seek treatment. The major chunk of women in both menopausal groups were having a BMI of the normal range which is similar to a study done by **Mahajan et.al.**¹¹ in Pune, Maharashtra where 58% of women were in the normal range of BMI. This study revealed that symptoms like excessive sweating, hot flashes, muscle joint pain, and feeling of being depressed/sad were higher in the postmenopausal group in comparison to the menopausal transition group. In a study on the rural population of Etawah Uttar Pradesh, **Mathew et al.**²⁰²¹¹² reported the most frequent problems of physical complaints of being tired or worn out (85.1%) and muscle joint pain (67.6%) which was almost the same as in our study. In another cross-sectional study carried out in the Department of Gynaecology in Jammu, **Mahajan et.al.** 2015¹¹ reported muscle and joint pain, sleep disorders, and hot flashes as the most common symptoms. In another cross-sectional study by **Kumari et al.** 2020¹³ joint and muscular discomfort (90.4%) was the most prevalent complaint followed by hot flashes (72.8%), irritability (67.4%) and physical and mental exhaustion (64.2%) almost similar findings like our study. **Goyal A et al.,** 2017¹⁴ observed in their study that visual problems (93.5%) were the most common symptom in a rural area, Allahabad which is much higher than our present study. In the present study, vasomotor symptoms (hot flashes, sweating) were higher among women of the menopausal transition group in comparison to the postmenopausal group. This may be due to the initial withdrawal of hormones which makes the menopausal transition group more sensitive to these changes in comparison to the postmenopausal group as they get adapted to these changes and overpassed the symptoms. In our study among Menopausal transition group 4(2.3%) were having Bronchial asthma and 1(0.6%) had COPD. In the postmenopausal group, 5(2.3%) had Asthma. In a study, **Mathew et al.** 2021¹² reported 27(8.6%) had asthma. Some information regarding respiratory association is mentioned by **Campbell et al.** 2017¹⁵ in a systematic review in "Menopause, lung function, and obstructive lung disease outcomes". In the present study 3(1.4%) had a history of CAD in postmenopausal women. A longitudinal study by **EI Khoudary et al.,** 2020¹⁶ conducted by American Heart Association states that cardiovascular disease (CVD) is the leading cause of death in women, who have notable increase in the risk for this disease after menopause. In the present study, 64(37.4%) in the

menopausal transition group and 95(44.4%) in the postmenopausal group had a history of hypertension and antihypertensive medications. In present study women in menopausal transition group having diabetes were 34(19.9%) and in postmenopausal group who have diabetes were 51(23.8%). **Goyal A et al.,** 2017¹⁴ also reported almost similar findings i.e., 23% prevalence of diabetes in support of this study. Urinary incontinence in the present study was seen in 21(12.3%) women in the menopausal transition group and 29(13.6%) postmenopausal women. vaginal dryness was seen in 17(9.9%) in the menopausal transition group and 63(29.4%) in postmenopausal group. Loss of libido was seen in 21(12.3%) in the menopausal transition group and 64(29.9%) postmenopausal women. In another study by **Dr. Sangeeta Ramteke et.al.,** 2016¹⁷ sexual problems were commonest among women of postmenopausal age i.e. 86% of women in the form of loss of interest in sexual activity, pain during intercourse, and loss of libido. A decrease in sexual drive is seen in the majority of postmenopausal women as lack of hormones estrogen causes atrophy of the vagina. Poor memory was seen in 29(17%) of women in the menopausal transition group and 46(21.5%) postmenopausal women and in an almost similar study conducted by **Mathew et al.,** 2021¹² feeling depressed was seen in 102(32.4%) women more or less similar to our findings whereas feeling tired was experienced by 268(85.1%), and poor memory complaints by 171(54.3%) were higher in comparison to this study.

V. CONCLUSION

Postmenopausal women harbour a considerable magnitude of physical and psychosocial morbidities. Almost all areas or domains evaluated were impaired in menopausal women. Lifestyle modifications like increased physical activity, appropriate diet modification, and Yoga practices can be therapeutic tool in managing menopausal symptoms and to achieve positive health. Symptomatic screening and motivation for health-seeking behavior at subcentres and primary health centre can be a complementary approach.

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