Assessment of Menopausal symptoms among middle age Women using Modified Menopause Rating Scale in selected area of Coimbatore District, Tamilnadu

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Abstract-
Background: Menopause is defined as complete cessation of menstruation for twelve months or more. It is a normal physiological change experienced by middle age women. Objective: The purpose of this study is to determine the typical symptoms of menopause, using the Menopause Rating Scale (MRS) in middle age women. Materials and Methods: By using MRS (Menopause Rating Scale questionnaire, 175 women aged 40-60 years were interviewed and documented the symptoms of menopause. The sample size was 175 and the he mean age of respondents in this study was 49.63 ± 5.25 (SD) years. Results: The mean age at menopause was 50.19 ± 2.19 (SD) years with median of 49 years. The top three symptoms of menopause that affect all women were (n = 175) were: Joint and muscular discomfort 143 (82%), physical and mental exhaustion 120 (69%) and sleeping problems 93 (53%). The somatic subscale's joint and muscular ache, physical and mental tiredness, and difficulty sleeping were the most often reported symptoms. When compared to postmenopausal and premenopausal women, perimenopausal women reported the most significant somatic complaints, and postmenopausal women had the most significant urogenital symptoms.

Keywords: **Menopause, Menopause Rating Scale, somatic, Psychological, Urogenital.**

Introduction
Menopause is a natural and permanent end of menstruation that is caused by a lack of estrogen and is not a pathological process. Menopause is derived from the Greek word pausis, meaning "pause," and men, meaning "month." A 12-month period of amenorrhea marks the end of the woman's reproductive and childbearing cycle. As women age, they lose the number of follicles in their ovaries as a result of atresia or ovulation. Granulosa cells in the ovaries, which are the main producers of estrogen and inhibitin B, decrease in number. AMH (another hormone secreted from the ovary's granulosa) levels also decrease. Since there is no inhibition of gonadotrophins from estrogen or inhibin A or B, FSH (folic triglycerides) and LH (luteinizing hormones) production increase. The loss of estrogen levels also disturbs the HPA axis, leading to endometrial failure. This may result in irregular menstrual cycles, until menses finally come to a complete stop.

It is well documented that menopause affects women's quality of life. Unfortunately, most of these women are unaware of the changes that come with menopause. With Physical, mental and urogenital symptoms, the frequency and intensity of menopausal symptoms vary by geography and region. This variation can be attributed to individual perceptions as well as psychosocial and cultural factors. However, menopausal symptoms are known to impact health related quality of life. This highlights the importance of clinicians using reliable and up-to-date tools to assess menopausal symptoms and their severity, to provide advice on treating menopausal symptoms and targeted services to those who suffer from them.

According to a study by the Indian Menopause Society (IMS), the average age of Menopause is 47.5 years, unlike western counter parts the average age of menopause is 51 Years. Menopausal health should therefore be a priority in India. The purpose of this study is to determine the typical symptoms of menopause, using the Modified Menopause Rating Scale (MRS) in middle age women.

Method:
This cross-sectional study was conducted in the community by visiting participants door to door. The area selected for study is Thudiyalur and Vellakinar and the period of study was from June 2023 to August 2023. Sample size of 175 was calculated by the assuming the proportion of women with menopausal symptoms to be 50% with relative precision of 20% and nonresponse rate of 10%. Women in the age group of 40-65 years were included in the study. Sampling technique adopted was

convenient sampling method.

Each patient was explained the nature and purpose of this study and their written informed consent was obtained. Data regarding menopausal symptom was also obtained by interviewing each participant using the standard menopause rating scale (MRS) questionnaire after translating it into the local language Tamil.

Questionnaire consisted of three Sections
1. Demographic Data : Age, Marital status, Educational level
2. Menopausal Status : Classified as per Stages of Reproductive Ageing Workshop (STRAW)
   (i) Post-Menopausal – No Menstrual bleeding in the previous12 months
   (ii) Peri Menopausal - those who did not have menstruation in the previous 2 months or those who experienced increasing irregularity of menses
   (iii) Premenopausal – Minor Changes in Cycle Length
3. Menopause Rating Scale (MRS) tool

Menopause Rating Scale (MRS)
Menopause Rating Scale MRS is an 11 item questionnaire on commonly associated symptoms of menopause with a scoring scale from zero (no complaints) to four (very severe symptoms). The menopause rating scale (MRS) is composed of 11 items and is divided into three sub scales.

- **Somatic symptoms:** Which include hot flushes, heart discomfort/palpitation, sleeping problems and muscle and joint problems. *(4 Symptoms)*
- **Psychological symptoms:** Depressive mood, irritability, anxiety and physical and mental exhaustion. *(4 Symptoms)*
- **Urogenital symptoms**: Sexual problems, bladder problems and dryness of the vagina.*(3 Symptoms)*

Each item can be graded from 0–4, (0 = not present), (1 = mild), (2 = moderate), (3 = severe), (4 = very severe). The scores of the Somato vegetative domain range from 0 to 16, the urogenital domain 0 to 12, and the psychological domain 0 to 16. The composite score ranges from 0 to 44. The data was collected by a single interviewer after explaining the questions in the local language –Tamil. All women who were interviewed were educated regarding menopause and its effects.

Inclusion criteria
Middle age Women in the age group of 40-60 years who volunteered to participate in the study.

Exclusion criteria
1. Women diagnosed with uncontrolled diabetes mellitus, hypertension, cardiac disease
2. History of alcohol or drug abuse

3. Undergoing hormone replacement therapy
4. Undergoing treatment for cancer or in remission.
5. Pregnant and breast feeding women

Statistical Analysis
- Demographic Data: Presented as Frequencies and Percentage
- Descriptive Analysis: Chi-square test was applied to compare the frequencies of the symptoms among the different menopausal status.
- SPSS software Version 23.0 was used for analysis. Level of Significance: $P < 0.05$

Results

The sample size was 175 and the he mean age of respondents in this study was 49.63 ± 5.25 (SD) years. The mean age at menopause was 50.19 ± 2.19 (SD) years with median of 49 years. Among these women, 40 (22.8%) were premenopausal, 69 (39.4%) perimenopausal and 66 (37.7%) postmenopausal. Regarding Marital status 128 (74%) respondents were married, 3(1%) unmarried and 44(25%) were widow. Regarding education 35 (20%) respondents had primary level education, 50(29%) have high school, 72 (41%) are graduates and 18(10%) were post graduates (Refer Table: 1).

Table: 1 Socio Demographic data of patients

Distribution of Age		
Age Group	**No. of Respondents**	**Percentage**
40 -45	37	21%
46-50	60	35%
51-55	44	25%
56-60	34	19%
Marital Status		
Married	128	74%
Unmarried	3	1%
Widow	44	25%
Educational Level		
Primary Level	35	20%
High School	50	29%
Graduate	72	41%
Post graduate	18	10%

Table: 2 Frequency of Menopausal Symptoms

Sl.No	Menopausal symptoms	n = 175	100%
1	Joint and muscular discomfort	143	82
2	Physical and mental exhaustion	120	69
3	Sleeping problems	93	53
4	Hot flushes, sweating	74	43
5	Irritability	68	39
6	Dryness of vagina	68	39
7	Anxiety	65	37
8	Depressive mood	58	33
9	Sexual problems	55	32

10	Heart discomfort	33	19
11	Bladder problems	25	14

The above table -2 shows the frequency of menopausal symptoms based on the most common complaints as determined by the modified MRS. The top three symptoms of menopause that affect all women were (n = 175) were: Joint and muscular discomfort 143 (82%), physical and mental exhaustion 1 2 0 (69%) a n d s l e e p i n g p r o b l e m s 9 3 (53%). F ollowed by o t h e r symptoms were hot flushes and sweating 74 (43%), irritability 68 (39%), dryness of vagina 6 8 (39%), anxiety 65 (37%), depressive mood 58 (33%), sexual problem 55 (32%), bladder problems 25(14%) and heart discomfort/palpitation 33 (19%).

Table: 3 Frequency of menopausal symptoms in the participants according to menopausal status

Subscale (menopausal symptoms)	All (n = 175)	Premenopausal (n = 40)	Perimenopausal (n = 69)	Postmenopausal (n = 66)
Somatic				
Hot flushes, sweating	75(20.8)$^{\#}$	15(17.7)	46(32.3)$^{\#,@}$	14(10.6)
Heart discomfort	32(9.1)	1(1.8)	20(14.7)$^{\#,@}$	11(8.4)
Sleeping problems	93(26.1)	12(14.8)	47(33.8)$^{\#,@}$	34(25.6)
Joint and muscular discomfort	143(40.1)	18(21.9)	65(45.7)$^{\#}$	60(45.1)$^{\$}$
Psychological				
Depressive mood	59(16.3)	7(7.9)	34(23.8)	18(17.6)$^{\$}$
Irritability	67(18.8)	16(17.9)	35(27.3)$^{\#,@}$	16(11.9)$^{@\$}$
Anxiety	66(18.2)	15(17.8)	39(27.7)$^{\#,@}$	12(8.6)
Physical and mental exhaustion	120(33.6)	18(21.7)	54(27.8)$^{\#}$	48(36.1)$^{\$}$
Urogenital				
Sexual problems	55(15.5)	8(10.4)	29(20.6) $^{@}$	18(13.2)$^{\$}$
Bladder problems	25(6.9)	4(4.8)	7(4.9)	14(10.2)$^{\$,\#\#}$
Dryness of vagina	68(18.9)	8(9.8)	29(20.6)$^{\#}$	31(22.8)$^{\$,\#\#}$

$^{\#}$ Significant difference $p < 0.05$ compared to premenopausal

$^{@}$ Significant difference $p < 0.05$ compared to postmenopausal.

$^{\$}$ Significant difference $p < 0.05$ compared to premenopausal.

$^{\#\#}$ Significant difference $p < 0.05$ compared to perimenopausal

Discussion:

The mean age at menopause in this study was 51.17 ± 2.23 years. When compared to other menopausal groups of women in this study, perimenopausal women were shown to have higher vasomotor symptoms; this difference was statistically significant. This can be explained by the fact that these women suffer the greatest degree of estrogen fluctuation during this phase, which results in the greatest number of vasomotor symptoms. According to our research, perimenopausal women reported the highest levels of joint and muscular discomfort, physical and mental exhaustions, and sleep difficulties, which are from the somatic and psychological subscales. These differences were also statistically significant when compared to premenopausal women.

In our study, 35% to 45% of premenopausal women reported similar symptoms (joint and muscular discomfort, physical and mental exhaustion, anxiety, depressing mood, irritability). This could be explained by the fact that the majority of the somatic or psychological symptoms that these middle-aged women experience could potentially be caused by other physical, psychological, or health issues related to aging in this group of women, which could manifest as symptoms similar to those of menopause.

In urogential subscale (sexual problems, bladder problems and vaginal dryness), the frequency of these symptoms were experienced mainly by postmenopausal group of women and it was also significant statistically when

compared to other menopausal status. Natural menopause may strongly contribute to sexual changes experienced by these women, however its needto be emphasized that there are numerous factors which contribute to declining sexual activities in middle age women following menopause.

Conclusion

The study between the ages of 40 and 60 years using modified Menopause Rating Scale (MRS), showed that the mean age of menopause was 51.17 ± 2.23 years. While their menopausal symptoms were comparable to those of other Asian women, investigations revealed a reduced prevalence of the classic menopausal symptoms of hot flashes and sweating. The somatic subscale's joint and muscular ache, physical and mental tiredness, and difficulty sleeping were the most often reported symptoms. When compared to postmenopausal and premenopausal women, perimenopausal women reported the most significant somatic complaints, and postmenopausal women had the most significant urogenital symptoms.

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