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**COMPARATIVE ANALYSIS OF MENOPAUSAL SYMPTOM INTENSITY: A  
PILOT STUDY IN PRE-MENOPAUSAL AND POST-MENOPAUSAL WOMEN  
BY USING MRS**

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**ABSTRACT**

Menopause or the cessation of the woman's menstrual cycle for twelve consecutive months is a natural biological phenomenon. This is preceded by Pre menopause, a stage before menopause which is marked by symptoms indicating a menopausal transition. This study aims to understand the severity of menopausal symptoms in menopausal women and compare the same with premenopausal women. This was achieved through a single-centre study which included random samples of premenopausal and post-menopausal women at Santhigiri Ayurveda Medical College, Olassery (Palakkad Thaluk), Palakkad in Kerala. Their menopausal symptoms were assessed using the Menopause Rating Scale (MRS). The results indicated that premenopausal women had higher frequency and increased severity of specific menopausal symptoms including depressive mood, irritability, physical fatigue, mental exhaustion, and hot flashes. These symptoms were significantly lower in the post-menopausal women. The study also revealed that psychological symptoms overtook the physical and urogenital symptoms in pre-menopausal women.

**Keywords: MRS; Premenopausal symptoms; Menopause; psychological symptoms.**

## 1. INTRODUCTION

Menopause or the cessation of the woman's menstrual cycle for 12 consecutive months is a natural biological process [1]. Most women begin the transition phase towards menopause at 47.5 years and they achieve menopause in their fifth decade. The average age of menopause is 47.5 years in Indian women with an average life expectancy of 71 years [2]. This menopausal transition period is marked by a gradual decline in the reproductive hormones, estrogen and progesterone, and irregular menstrual cycle for most women [3]. It also is accompanied by a plethora of physical and emotional symptoms. The severity of the symptoms varies in every woman with a range of mild, moderate or severe. This is largely determined by factors such as lifestyle, genetics, and overall health. Common symptoms include hot flashes (sudden feeling of warmth), irritability, mood swings, fatigue, weakness, dry skin, vaginal dryness, sleep disturbances, depression, and others [4]. Hot flushes are typically short-lived, with each episode lasting from five to ten minutes [5]. When these symptoms are severe, women are unable to function in their daily lives as their quality of life deteriorates. For most women, the symptoms resolve after attaining menopause. For some, it prevails despite

attaining menopause. There is a left shift in the onset of menopause (as early as mid-40s). Due to longer life expectancies, there is a significant increase in the length of post-menopausal years too. Therefore, it is crucial to understand the prevalence and intensity of menopausal symptoms in premenopausal and post-menopausal women to provide effective, personalised healthcare interventions and support with a strong consideration of individual health profiles.

## 2. MATERIAL AND METHODS

This research attempts to analyse the intensity of menopausal symptoms in premenopausal and postmenopausal women. The study was conducted in a single centre at Santhigiri Ayurveda Medical College, Olassery (Palakkad Thaluk), Palakkad in Kerala. The sample size for the study was 60 women and the age span of the sample size was between 42 to 52 years. Of these 30 were premenopausal women (women who have not attained menopause and are undergoing menopausal transition) and 30 were post-menopausal women (women who have attained menopause).

The criteria for defining premenopausal women were marked by those with less than 12 menstrual cycles in the last 12 months from the date of enrolling for the study. Those who had no menstruation for the last

12 months were included under the category of postmenopausal women. This study excluded women who were using oral contraceptives or hormone therapy or suffered any medical condition that affected the menstrual cycle in the last 6 months.

The assessment was conducted using the Menopause Rating Scale (MRS).<sup>6</sup> this rating scale assesses 11 symptoms or complaints on a scale of 0-4. 0 indicates no complaints and 4 indicates severe symptoms. The two cohorts (premenopausal and postmenopausal women) were investigated for a comparative analysis of the intensity of the symptoms in both categories. The data on socio-demographic characteristics, menopausal status, and the 11-item MRS were collected using an interviewer-administered questionnaire. Statistical analyses consisted of descriptive data and chi-squared analyses.

### 3. RESULTS

The demography was varied and comprised of premenopausal and postmenopausal women. These women were either married or unmarried women and belonged to different educational levels. 98.3% of the participants in the study were married. Of these, 55% were educated at the secondary school level, and 45% at the higher education level. The sample comprised of varying socio-economic backgrounds.

The reports from the MRS indicated that most women experienced 50% of

psychological subscales (with symptoms including mood swings, irritability, anxiety, depression, and others), 33.3% of somatic subscales (with symptoms including fatigue, body pain, hot flushes, sweating, insomnia) and only 16.7% of urogenital subscales (with symptoms including vaginal dryness, itching or burning sensation, pelvic pain and others).

The severity of symptoms was higher for premenopausal women than for postmenopausal women. This was indicated by the MRS scale where each of the somatic, psychological, and urogenital subscale scores was higher among premenopausal women than postmenopausal women. The results also indicated a list of six of the most commonly reported menopausal symptom: mild depressive mood (93.3%), severe irritability (90%), severe physical and mental exhaustion (90%), moderate hot flushes (56.7%), moderate joint and muscular discomfort (56.6%), and moderate dryness of the vagina (53.3%).

**Table 1** indicates the results of the Chi-square test that there is a significant correlation between Menopause and Hot flashes (Chi-square=31.862,  $P < 0.01$ ). A higher percentage of pre-menopausal women suffered severe and moderate degrees of hot flashes: 43.3% and 56.7% respectively. The results indicate that the severity of hot flashes reduced after menopause among more women. 60 % of

women who have achieved menopause reported mild hot flashes. **(Figure 1)**.

The Chi-square test from **Table 2** showed that there is a significant association between Menopause and Depressive mood (Chi-square=15.096,  $P<0.01$ ). In the pre-menopausal stage, those who have not achieved menopause reported mild depressive mood in large numbers (93.3%). After menopause, only 43.3% of women had mild depressive mood and more than 50% of women did not show any depressive symptoms **(Figure 2)**.

**Table 3** demonstrates that there is a significant association between Menopause and Irritability (Chi-square=45.527,  $P<0.01$ ). Most respondents who have not achieved menopause reported severe irritability (90%) while a large number of respondents who have achieved menopause reported only mild irritability (76.7%) **(Figure 3)**.

**Table 4** indicates that there is a significant association between Menopause and Physical and Mental Exhaustion (Chi-square=56.143,  $P<0.01$ ). Severe physical and mental exhaustion was reported in most women who have not achieved menopause

(90%). Only 1% of women who have achieved menopause reported severe physical and mental exhaustion. Most post-menopausal women had only moderate physical and mental exhaustion (76.7%) **(Figure 4)**.

The test results in **Table 5** infer that there is a significant association between Menopause and Dryness of the vagina (Chi-square=23.297,  $P<0.01$ ). One can observe that most women who have not achieved menopause experienced severe (46.7%) and moderate (53.3%) levels of dryness of the vagina. More than half of the women who have achieved menopause (56.7%) reported only moderate dryness of the vagina **(Figure 5)**.

**Table 6** demonstrates that there is no statistically significant (Chi-square =2.411,  $P>0.05$ ) association between Menopause and Joint & muscular discomfort.

**Table 7** demonstrates there is a significant association between Menopause and the score (Chi-square=4.630,  $P<0.05$ ). All (100%) who have not achieved menopause reported mild scores and only 80% of women who have achieved menopause reported mild scores **(Figure 7)**.

**Table 1: Association between Menopause and Hot flushes (Chi-square test)**

Menopause	Hot flushes			Total	Chi-square value	P value
	Mild	Moderate	Severe			
Not achieved	0(0)	17(56.7)	13(43.3)	30(100)	31.862	<0.001**
Achieved	18(60)	12(40)	0(0)	30(100)		

\*\* : Significant at 1%

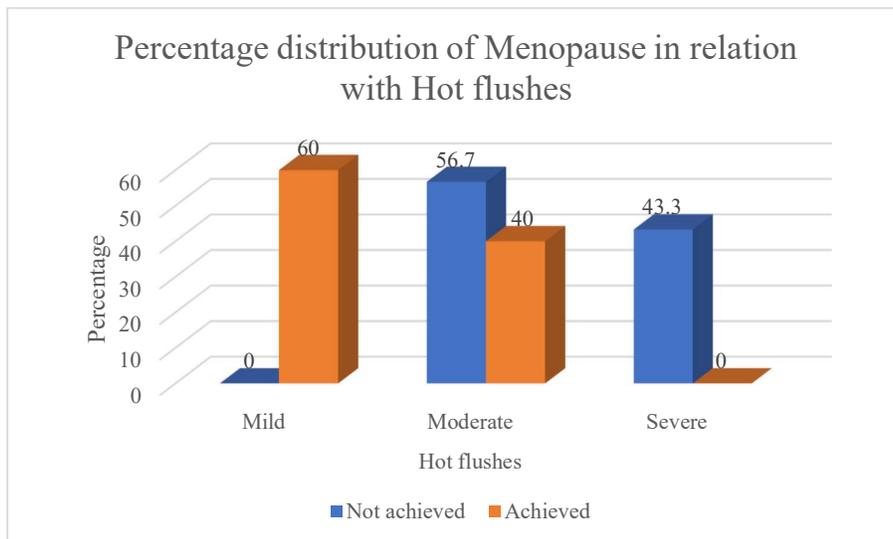


Figure 1: Diagrammatic representation of Percentage distribution of Menopause about Hot flushes

Table 2: Association between Menopause and Depressive mood (Chi-square test)

Menopause	Depressive mood		Total	Chi-square value	P value
	None	Mild			
Not achieved	2(6.7)	28(93.3)	30(100)	15.096	<0.001**
Achieved	17(56.7)	13(43.3)	30(100)		

\*\* : Significant at 1%

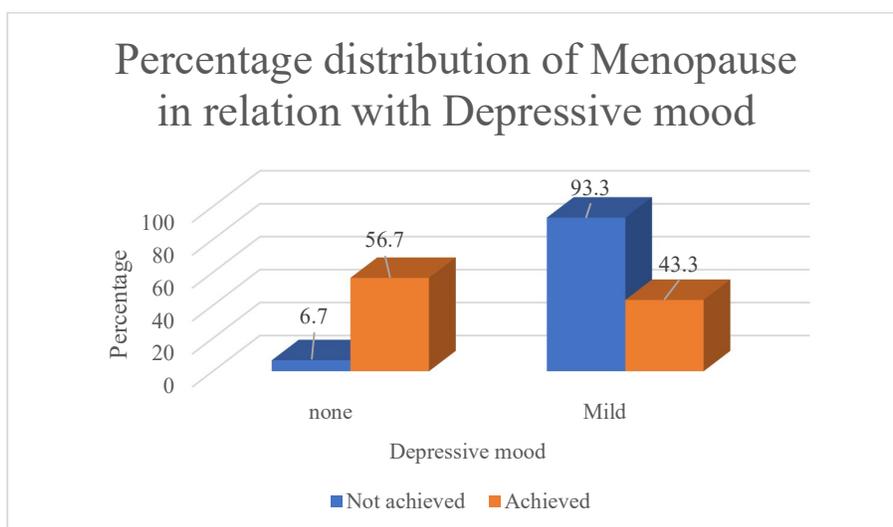


Figure 2: Diagrammatic representation of Percentage distribution of Menopause about Depressive mood

Table 3: Association between Menopause and Irritability (Chi-square test)

Menopause	Irritability			Total	Chi-square value	P value
	None	Mild	Severe			
Not achieved	0(0)	3(10)	27(90)	30(100)	45.527	<0.001**
Achieved	6(20)	23(76.7)	1(3.3)	30(100)		

\*\* : Significant at 1%

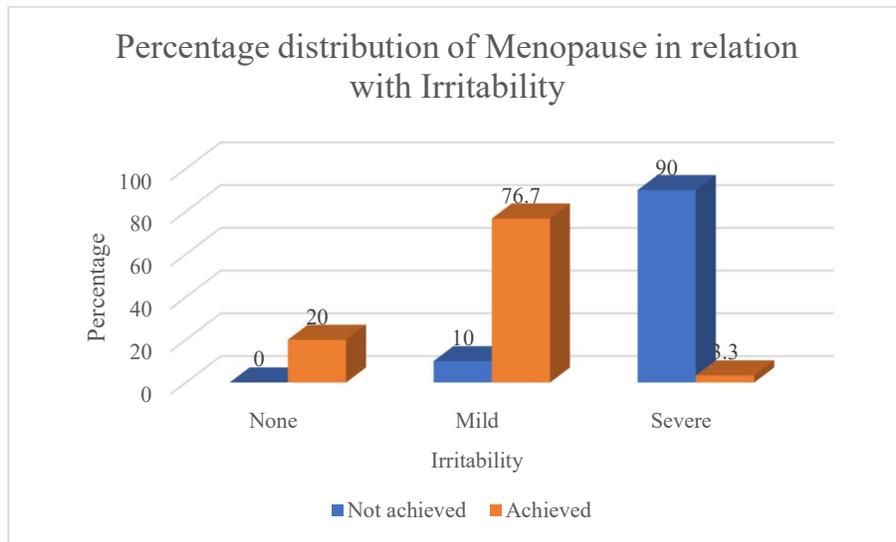


Figure 3: Diagrammatic representation of Percentage distribution of Menopause about Irritability

Table 4: Association between Menopause and Physical & Mental Exhaustion (Chi-square test)

Menopause	Physical and Mental Exhaustion				Total	Chi-square value	P value
	None	Mild	Moderate	Severe			
Not achieved	0(0)	3(10)	0(0)	27(90)	30(100)	56.143	<0.001
Achieved	6(20)	0(0)	23(76.7)	1(3.3)	30(100)		

\*\* : Significant at 1%

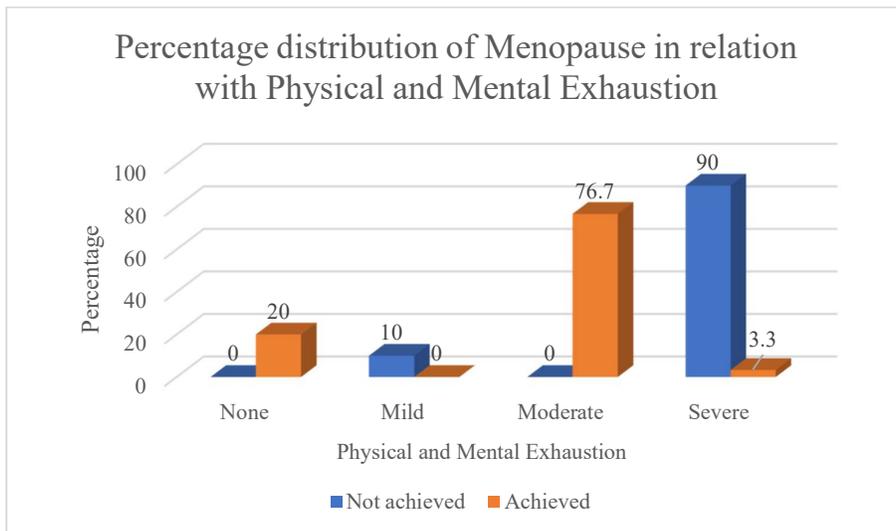


Figure 4: Diagrammatic representation of Percentage distribution of Menopause about Physical and Mental Exhaustion

Table 5: Association between Menopause and Dryness of the vagina (Chi-square test)

Menopause	Dryness of vagina			Total	Chi-square value	P value
	None	Moderate	Severe			
Not achieved	0(0)	16(53.3)	14(46.7)	30(100)	23.297	<0.001**
Achieved	12(40)	17(56.7)	1(3.3)	30(100)		

\*\* : Significant at 1%

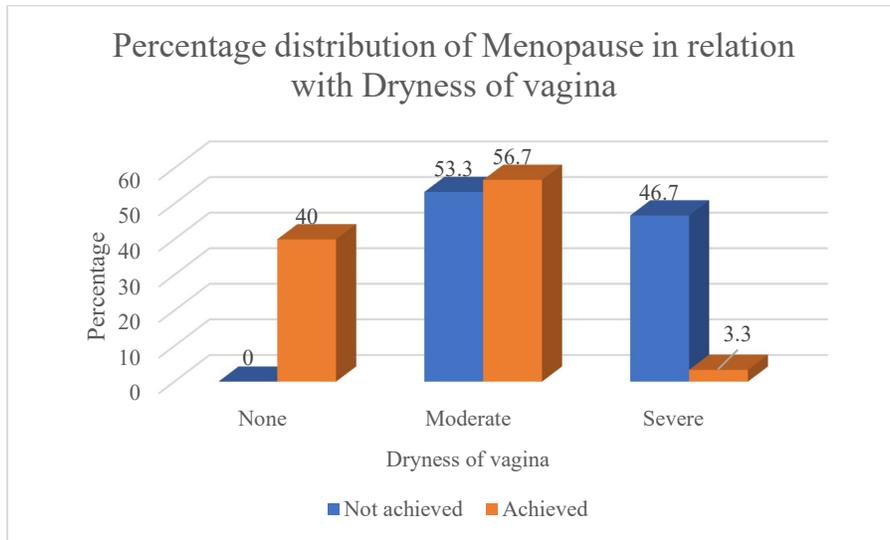


Figure 5: Diagrammatic representation of Percentage distribution of Menopause about Dryness of the vagina

Table 6: Association between Menopause and Joint & Muscular discomfort (Chi-square test)

Menopause	Joint and muscular discomfort		Total	Chi-square value	P value
	Moderate	Severe			
Not achieved	4(13.3)	26(86.7)	30(100)	2.411	0.121NS
Achieved	0(0)	30(100)	30(100)		

NS: Not Significant

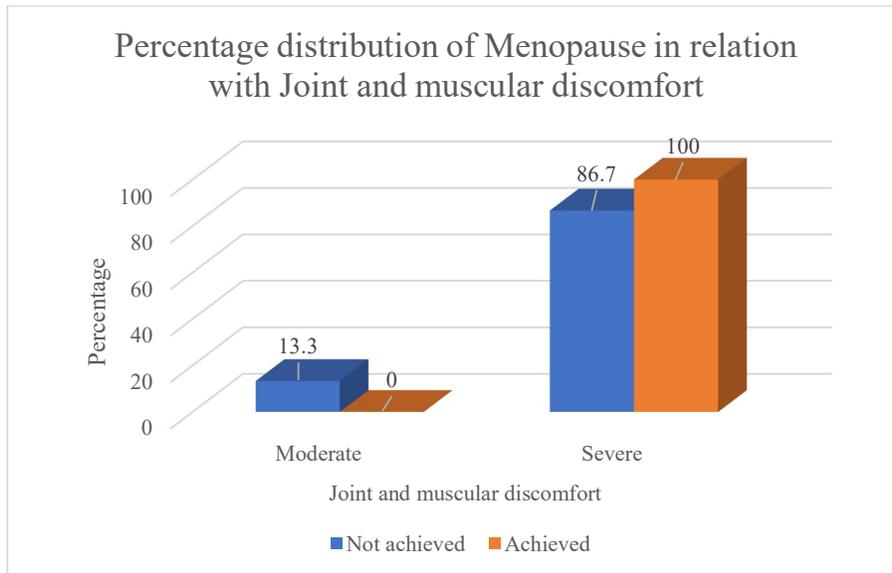


Figure 6: Diagrammatic representation of Percentage distribution of Menopause about Joint and muscular discomfort

Table 7: Association between Menopause and Score

Menopause	>Score 11		Total	Chi-square value	P value
	None	Mild			

Not achieved	0(0)	30(100)	30(100)	4.630	0.031*
Achieved	6(20)	24(80)	30(100)		

\*: Significant at 5%

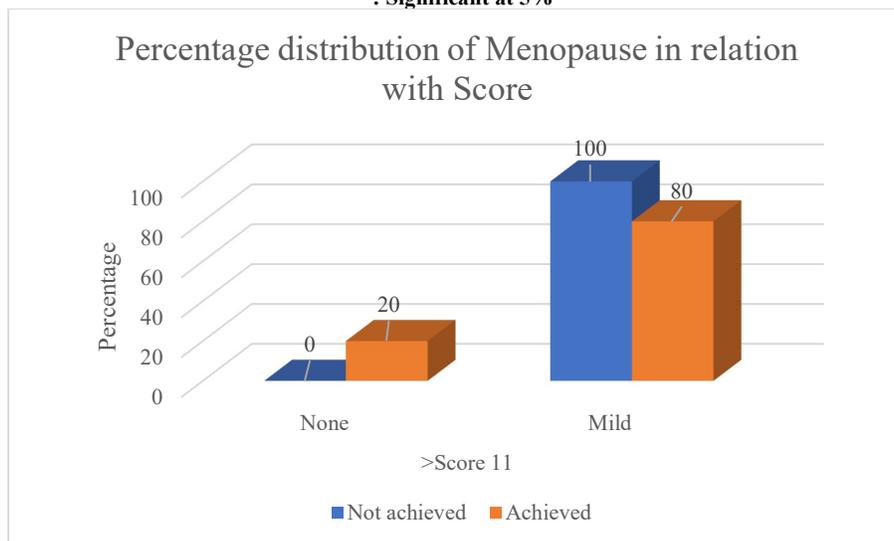


Figure 7: Diagrammatic representation of Percentage distribution of Menopause about Score

#### 4. DISCUSSION

Menopausal symptoms are debilitating and can come in the way of women’s everyday life functioning. The symptoms are severe or more pronounced in the pre-menopausal stage and they reduce in the post-menopausal stage. This is attributed to the sudden dip in the reproductive hormones, estrogen and progesterone that begins during the pre-menopausal stages. The woman’s body is beginning to understand these sudden fluctuations and responds in the form of varied pronounced symptoms. Specifically, the reduction in the hormonal levels affects women’s reproductive cycle (including the menstrual cycle) and ovarian function. Additionally, they experience a range of psychological (mood swings, irritability, anxiety, and the like), physical (hot flashes, fatigue, weight loss or weight

gain and the like) and urogenital symptoms such as low sex drive, and vaginal dryness among others.

The study shows how most women who have not yet achieved menopause and those who have achieved menopause experience a range of psychological, physical, and urogenital symptoms. The symptoms are severe in those who have not achieved menopause or are in the premenopausal stages. These symptoms become moderate or mild in those who have achieved menopause or post-menopause.

The study demonstrates that premenopausal women had pronounced psychological symptoms before menopause, this includes depressive mood and irritability. Nearly all women who have not achieved menopause demonstrated mild depressive mood, depression which was not present in nearly

half of the women who have achieved menopause. Similarly, most premenopausal women showed severe irritability. But, in those women who have achieved menopause the levels of irritability were mild. Most women experienced urogenital symptoms in the form of moderate to severe levels of vaginal dryness before menopause. This symptom was seen in nearly half of the women in moderate levels after menopause. The other half of the postmenopausal women had no vaginal dryness. Among the physical symptoms, hot flashes and physical and mental exhaustion were severe in most women who have not yet achieved menopause. These symptoms were reported at moderate levels in post-menopausal women. The study indicates that premenopausal women suffer moderate to severe symptoms. The same symptoms would be reported in mild intensity or none among the post-menopausal women. The psychological symptoms are comparatively reported in higher numbers than physical or urogenital symptoms. Adaptation and adjustment of the body can be one of the reasons for this observation. When the woman reaches menopause, her ovaries stop producing estrogen and progesterone completely. By this time, the degree of hormonal fluctuations is reduced, the hormones are more stable, and the body has adapted and adjusted to these hormonal changes. Hence the symptoms reduce in

intensity and become less pronounced in post menopause.

## 5. CONCLUSION

The study compared the intensity of symptoms in pre-menopausal women and post-menopausal women in the age group of 42 to 52 years. The statistical analysis of this study infers that the intensity of menopausal symptoms is higher in pre-menopausal women than in menopausal women. Most menopausal symptoms cease to exist in women who have achieved menopause. However, the study also demonstrated that some symptoms such as irritability and depressive mood continue to exist at mild levels in women even after menopause. This study indicates the need for continued mental care services for women even after menopause. Future studies can include pan-Indian or Asian women to represent women from varied Asian or Indian cultures. It could also focus on familial or social relationships of premenopausal and postmenopausal women, the need for psychological care services or the levels of physical activity in women who have not achieved menopause and after achieving menopause.

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