

A Crossover Study to Compare the Effectiveness of Progressive Muscle Relaxation and Oral Intake of Turmeric Paste on Menopausal Maladies among Perimenopausal and Postmenopausal Women

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Abstract:- “The word 'menopause' comes from the Greek words 'menos', meaning month, and 'pause', meaning to cease. So, menopause means the 'monthly' (the period) stops”. Menopause is the life time event among women when menstrual cycles completely cease for a period of 12 consecutive months, and is caused by reduced secretion of the ovarian hormone oestrogen. Perimenopause is defined as the time of irregular periods until menopause. Postmenopause is a period after the menopause until the end of the life. The length of the perimenopausal transition is estimated at nearly 4 years. The age of natural menopause in Indian women is 46.2 ± 4.9 years. The Indian women begin their perimenopausal stage, identified by irregular periods, by the age of 44.69 ± 3.79 years. Menopause is a period accompanied by many physical and emotional changes that include vasomotor symptoms including night sweats, hot flashes, and pain; joint pain; decreased motion flexibility; vaginal discharge; stress incontinence; reduced hydration and wrinkling of the skin; neuropsychiatric symptoms such as forgetfulness, headache; psychiatric problems such as depression, anxiety & insomnia. Systemic vasomotor symptoms (VMS) are the classic cluster affecting 80% of peri- and post-menopausal women. Genitourinary syndrome of menopause (GSM), are seen in 50% of postmenopausal women, and it negatively impacts quality of life. Supplementing estrogen in the form of phytoestrogenic products may reduce the physiological symptoms related with menopause such as hot flash, heart racing, joint and muscle irritability and uro-genital issues. Techniques which activates the production of opioids and stimulates release of Cortical may reduce psychological symptoms like depression and anxiety and improve the sleep quality. The aim of the study is to compare the effect of oral intake of turmeric paste and progressive muscle relaxation over physiological and psychological symptoms of menopause. **Method:** Quantitative approach, true experimental, crosses over design was used. **Sample:** The study was performed on 60 perimenopausal and post menopausal women, aged 40-60 years who experienced various degrees of menopausal symptoms, residing at selected Villages in Namakkal District and who fulfilled the inclusion criteria. **Sample selection:** Selection of villages through random allocation

and snowball sampling technique was used to select the samples from each village. **Sample size:** Sample size of the present study consists of 30 (perimenopausal women – 15 & postmenopausal women – 15) in experimental group I and 30 (perimenopausal women – 15 & postmenopausal women – 15) in experimental group II. **Tool:** The data was collected using Menopausal Maladies Scale. This scale consisted of 30 items with two subscales in which 20 items were related with physiological symptoms and 10 items were related with psychological symptoms. **Data analysis:** Data analysis was done using descriptive and inferential statistics. **Findings:** Unpaired t' values 0.371 and 0.589 respectively reveal that there is no significant difference in physiological and psychological menopausal maladies between experimental group I & II before intervention. Unpaired t values 5.03 and 7.96 respectively reveal that there is significant difference in physiological and psychological menopausal maladies between experimental group I & II after first intervention. While comparing the Mean 26.4 (SD; 10.7 & Mean % 33) of physiological maladies of experimental group I with mean 47.8 (SD: 20.7 & mean % percentage 59.8) of physiological maladies of experimental group II, PMR effectively reduces physiological maladies than the oral intake of turmeric paste. The same effect is identified in relevant to psychological maladies. Unpaired t values 5.23 and 5.26 respectively reveal that there is significant difference in physiological and psychological menopausal maladies between experimental group I & II after second intervention. While comparing the Mean 48.4 (SD; 22 & Mean % 60.5) of physiological maladies of experimental group I with mean 25.1 (SD: 10.6 & mean % percentage 45) of physiological maladies of experimental group II, PMR effectively reduces physiological maladies than the oral intake of turmeric paste. The same effect is identified in relevant to psychological maladies. **Conclusion:** Menopausal maladies involving both physiological and psychological components can be effectively managed with comprehensive intervention such as progressive Muscle Relaxation and oral intake turmeric paste.

Keywords:- Perimenopause, post menopause, Maladies, PMR (Progressive muscle relaxation).

I. INTRODUCTION

Menopause is an unavoidable life time event in the life of each woman during which women suffer with many physiological and psychological symptoms. These symptoms are associated with estrogen deficiency occurs due to diminished ovarian function during menopause. Short - and long - term implications associated with menopausal women are because of lack of awareness on proven and cost effective evidence-based alternative therapies.

A. OBJECTIVES

- To find out the prevalence of menopausal maladies among perimenopausal and postmenopausal women.
- To assess the effectiveness of Progressive Muscle relaxation versus oral intake of Turmeric Paste on Menopausal Maladies among perimenopausal women.
- To assess the effectiveness of oral intake of Turmeric Paste versus Progressive Muscle relaxation on Menopausal Maladies among postmenopausal women.
- To find out the association between the effects of Progressive Muscle relaxation and oral intake of Turmeric Paste and post test level of menopausal maladies among perimenopausal and postmenopausal women.

B. Hypothesis

- There is no significant difference in the effect of progressive muscle relaxation and oral intake of turmeric paste on the level of Menopausal maladies among perimenopausal and postmenopausal women.
- There is no significant association between the effects of Progressive Muscle relaxation and oral intake of Turmeric Paste and post test level of menopausal maladies among perimenopausal and postmenopausal women.

II. METHODOLOGY

Quantitative comparative approach, true experimental, crosses over design was adopted for the present study. The sample of the present study was perimenopausal and post menopausal women residing at selected Villages in Namakkal District and who fulfilled the inclusion criteria. Selection of villages through random allocation and snowball sampling was used to select samples from each village. Sample size of the present study consists of 30 (perimenopausal women – 15 & postmenopausal women – 15) in experimental group I and 30 (perimenopausal women – 15 & postmenopausal women – 15) in experimental group II. The data was collected using Menopausal Maladies Scale. This scale consisted of 30 items with two subscales in which 20 items were related with physiological symptoms (subscale -1) and 10 items were related with psychological symptoms (subscale -2). Data collection: After obtaining consent from the study participants, for the 30 samples in experimental group I, Progressive muscle relaxation techniques was demonstrated and return demonstration was observed and mistakes were corrected. Total duration of each PMR session was 10-15 minutes per day, which was

continued for 3 weeks. Technique of PMR used was Tensing the muscle with inhalation for 5 seconds, relaxing the muscle for 5 seconds with exhalation and feel the relaxation for 5 seconds. The steps of are audio recorded by the investigator and it was given to the samples for reinforcement. Simultaneously for the 30 samples in experimental group II, turmeric paste was administered orally. It was prepared by using 3 grams of turmeric powder mixed in 3 – 5 drops of water. Frequency of oral intake of turmeric paste was 2 doses / Week with 2 and 3 days interval for 3 weeks. Before starting intervention pre test data was collected using menopausal rating scale in both experimental group -I & II. After intervention post test data was collected using the same menopausal rating scale in both experimental group -1 & 2. After collecting post test data from experimental group I and II, intervention was exchanged between the groups for an another 3 weeks (experimental group - I – Oral intake of turmeric paste and experimental group – II – Progressive Muscle relaxation) and after 3 weeks of intervention again post test data was collected using menopausal rating scale.

Collected data was analyzed using descriptive and inferential statistics. Descriptive statistics used were frequency and percentage distribution, mean, standard deviation and mean percentage. Inferential statistics used were paired t test, unpaired t test and ANOVA. Chi square test was used to find out the association between the effects of Progressive Muscle relaxation and oral intake of Turmeric Paste and post test level of menopausal maladies among perimenopausal and postmenopausal women.

III. RESULTS AND DISCUSSION

As based on the frequency and percentage distribution of demographic variables, in both experimental group I and II peri and post menopausal women are equally distributed and age of the samples in experimental group I and II were in between 40 – 50 years 15 (50%) and 51 – 60 years 15 (50%) respectively. As per the religion, maximum samples were belong to Hindus in experimental group I, 23 (77%) and experimental group -II, 29 (97%). Most of the samples were married in experimental group I, 26 (86%) and experimental group - II, 23 (77%). Most of the sample had primary level of education in experimental group I, 20 (67%) and in experimental group - II, 12 (40%) had primary and secondary level of education. Most of the samples were house wives in experimental group I, 22 (72%) and in experimental group II, most of them were general workers 19(63%) Most of the samples had monthly income between) Rs 5001 – Rs.10000 in experimental group I, 14 (46%) and experimental group II, 18 (58%) and most of them were obese in experimental group I, 21 (70%). None of the sample had the habit of doing exercise and using alcohol and tobacco products. In experimental group I, most of the women lived in nuclear family 13 (44%) and 14 (46%) lived in nuclear and joined family.

(N=15)

Menopausal Maladies			Experimental Group – I				Experimental Group – II			
			Peri		Post		Peri		Post	
			f	%	f	%	f	%	f	%
Physiological Maladies	Skin	Hot flashes	8	53	7	47	9	60	7	47
		Night Sweating	9	60	7	47	6	40	5	33
		Formication	7	47	6	40	7	47	4	26
	Heart	Unusual awareness of heart beat	6	40	7	47	6	40	9	60
		Heart racing	6	40	8	53	8	53	10	66
		Heart tightness	5	33	5	33	5	33	8	53
	Sleep	Difficulty in falling asleep	8	53	12	80	7	47	10	66
		Difficulty in sleeping through	6	40	10	66	8	53	11	73
		Waking up difficulty	5	33	2	13	6	40	5	33
	Joint and muscles	Joint pain	8	53	10	67	8	53	10	66
		Soreness in joints and muscles	5	33	8	53	6	40	8	53
		Feeling of fatigue	3	20	7	47	5	33	9	60
		Myalgia	4	26	5	33	4	26	6	40
		Vertigo	2	13	6	40	4	26	5	33
		Melancholia	5	33	7	46	7	47	6	40
	Uro-genital	Difficulty in urinating	10	66	12	80	11	73	8	53
		Bladder incontinence	4	26	7	46	5	33	6	40
		Dryness or burning in vagina	5	33	6	40	4	26	7	47
		Lack of interest in sexual activity	7	47	14	93	6	40	12	80
		Difficulty in sexual intercourse / Lack of satisfaction	4	26	10	66	7	47	11	73
	Psychological Maladies	Depression	Feeling down	7	47	8	53	9	60	8
Feeling Sad			4	26	6	40	4	26	5	33
Crying spells			6	40	5	33	7	47	6	40
Mood swings			6	40	7	46	7	47	6	40
Anxiety		Feeling of inner tension	13	87	10	66	12	80	8	53
		Feeling panicky	8	53	10	66	7	47	9	60
Stress		Feeling of nervousness	8	53	7	47	8	53	10	66
		Feeling Restlessness	7	47	10	66	9	60	8	53

Memory & Concentration	Impaired memory	6	40	9	60	7	47	6	40
	Decrease in concentration	9	60	10	66	8	53	9	60

Table 1: Frequency and percentage distribution of prevalence of menopausal maladies among perimenopausal women before intervention

Table 1 infers that the skin related problems are more prevalent in peri menopausal women than in the post menopausal women in both experimental group I & II. Heart related problems are more prevalent among post menopausal women than in perimenopausal women in both experimental group I & II. Sleep related issues and joint and muscle related issues are more prevalent among post menopausal women than among perimenopausal women in both experimental group I & II. Uro genital issues are more prevalent among both perimenopausal and post menopausal women in both experimental group I & II. Prevalence of

depression and stress are equal among peri and post menopausal women in experimental group I & II. Anxiety is more prevalent among peri menopausal and memory and concentration issues are more prevalent in post menopausal women in both experimental group I & II.

Unpaired t test, Mean, SD & Mean percentage of samples as based on their level of menopausal maladies before intervention in experimental group I and experimental group II.

S. No	Areas	Max. score	Experimental Group I - Pretest score			Experimental Group II - Pretest score			Difference in Mean (%)	DF	't' Value	P Value
			Mean	SD	Mean (%)	Mean	SD	Mean (%)				
1	Physiological	80	52.4	21.5	65.5	50.3	22.3	62.9	2.6	58	0.371	0.712
2	Psychological	40	17.6	8.1	44	19	10.2	47.5	3.5	58	0.589	0.558

Table 2: Over all comparison of the level of menopausal maladies between experimental group I and experimental group II before interventions

In Table 2, t values 0.371 and 0.589 respectively reveal that there is no significant difference in physiological and psychological menopausal maladies between experimental group I & II.

S. No	Areas	Max. scores	Experimental - I After PMR			Experimental - II After oral intake of turmeric paste			Difference in Mean (%)	DF	't' Value	P Value
			Mean	SD	Mean (%)	Mean	SD	Mean (%)				
1	Physiological	80	26.4	10.7	33	47.8	20.7	59.8	26.8	58	5.03	0.0001
2	Psychological	40	27.2	11.4	68	10	3.3	25	43	58	7.96	0.0001

Table 3: Over all comparison of physiological and psychological menopausal maladies between experimental group I & II after first intervention

In Table 3, t values 5.03 and 7.96 respectively reveal that there is significant difference in physiological and psychological menopausal maladies between experimental group I & II. While comparing the Mean 26.4 (SD; 10.7 & Mean % 33) of physiological maladies of experimental

group I with mean 47.8 (SD: 20.7 & mean % percentage 59.8) of physiological maladies of experimental group II, PMR effectively reduces physiological maladies than the oral intake of turmeric paste. The same effect is identified in relevant to psychological maladies.

S. No	Areas	Max. scores	Experimental Group I - After oral intake of turmeric			Experimental Group II After PMR			Difference in Mean (%)	DF	't' Value	P Value
			Mean	SD	Mean (%)	Mean	SD	Mean (%)				
1	Physiological	80	48.4	22	60.5	25.1	10.6	45	15.4	58	5.23	0.0001
2	Psychological	40	18	8.6	31.4	9.4	2.5	23.5	7.9	58	5.26	0.0001

Table 4: Over all comparison of physiological and psychological menopausal maladies between experimental group I & II after second intervention

In Table 4, t values 5.23 and 5.26 respectively reveal that there is significant difference in physiological and psychological menopausal maladies between experimental group I & II. While comparing the Mean 48.4 (SD; 22 & Mean % 60.5) of physiological maladies of experimental

group I with mean 25.1 (SD: 10.6 & mean % percentage 45) of physiological maladies of experimental group II, PMR effectively reduces physiological maladies than the oral intake of turmeric paste. The same effect is identified in relevant to psychological maladies.

S. No	Areas	Max. Scores	Experimental Group I									DF (Between Treatment)	DF (With in Treatment)	'F' Value	P Value
			Pretest score			1 st Post test score After PMR			2 nd Post test score After oral intake of turmeric paste						
			Mean	SD	Mean (%)	Mean	SD	Mean (%)	Mean	SD	Mean (%)				
1	Physiological	80	52.4	21.5	65.5	26.4	10.7	33	48.4	22	60.5	2	87	3.54	3.10
2	Psychological	40	19.6	8.1	44	27.2	11.4	68	18	8.6	45	2	87	3.76	3.10

Table 5: Over all comparison of pretest and post test level of physiological and psychological menopausal maladies in experimental group I

In table 5, F value 3.54, reveals that there is significant difference in physiological maladies of experimental group I, in pre test , post test 1 and post test 2. While comparing pre test mean 52.4 with the 1st post test mean 26.4, PMR effectively reduces physiological menopausal maladies. At the same time while comparing pre test mean 52.4 with the 2nd post test mean 48.4, oral intake of turmeric paste also reduces physiological maladies in experimental group I.

F value 3.76, reveals that there is significant difference in psychological maladies of experimental group I, in pre test , post test 1 and post test 2. While comparing pre test mean 19.6 with the 1st post test mean 27.2, PMR effectively reduces Psychological menopausal maladies. At the same time while comparing pre test mean 19.6 with the 2nd post test mean 18, oral intake of turmeric paste also reduces psychological maladies in experimental group I.

S. No	Areas	Max. scores	Experimental Group II									DF (Between Treatment)	DF (With in Treatment)	'F' Value	P Value
			Pretest score			1 st Post test score After oral intake of turmeric			2 nd Post test score After PMR						
			Mean	SD	Mean (%)	Mean	SD	Mean (%)	Mean	SD	Mean (%)				
1	Physiological	80	50.3	22.3	62.9	47.8	20.7	59.8	25.1	10.6	31.4	2	87	4.113	3.10
2	Psychological	40	19	10.2	47.5	10	3.2	25	9.4	2.5	23.5	2	87	3.54	3.10

Table 6: Over all comparison of pretest and post test level of physiological and psychological menopausal maladies in experimental group II

In table 6, F value 4.113, reveals that there is significant difference in physiological maladies of experimental group II, in pre test, post test 1 and post test 2. While comparing pre test mean 50.43 with the 1st post test mean 47.8, oral intake of turmeric paste reduces physiological menopausal maladies. At the same time while comparing pre test mean 50.3 with the 2nd post test mean 25.1, PMR effectively reduces physiological maladies in experimental group II.

F value 3.54, reveals that there is significant difference in psychological maladies of experimental group II, in pre test, post test 1 and post test 2. While comparing pre test mean 19 with the 1st post test mean 10, oral intake of turmeric paste reduces physiological menopausal maladies. At the same time while comparing pre test mean 19 with the 2nd post test mean 9.4, PMR effectively reduces physiological maladies in experimental group II.

Chi Square test to find the association the selected demographic variable and the first and second post test level of menopausal maladies in experimental group I & experimental group II reveals that age and body mass index has significant association with post test level of menopausal maladies after PMR and body mass index and family type are associating with post test level of menopausal maladies after oral intake of turmeric paste in experimental group I.

In experimental group II, body mass index has significant association with post test level of menopausal maladies after oral intake of turmeric paste and family type has association with post test level of menopausal maladies after PMR.

IV. CONCLUSION

Menopausal maladies involving both physiological and psychological components can be effectively managed with comprehensive intervention such as progressive Muscle Relaxation and oral intake turmeric paste.

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