



“EFFECTS OF YOGA THERAPY ON PHYSICAL AND PSYCHOLOGICAL QUALITIES OF LIFE IN PERIMENOPAUSAL WOMENS- AN EXPERIMENTAL STUDY”

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ABSTRACT

Background: Perimenopausal period is characterized by a continuous decline in ovarian function due to which women are vulnerable to various physical and psychological symptoms affecting quality of life. Currently these symptoms are managed by hormone replacement therapy. However, hormonal therapy can cause complications including malignancy which has resulted in search for various alternative therapies to improve the quality of life (QOL). Yoga is one such alternative therapy shown to enhance the QOL at all stages of human life associated with the chronic illness. There are very few scientific studies regarding the effect of yoga on perimenopause and in this study, we investigated the effects of yoga therapy on physical and psychological symptoms using the standardized questionnaire.

Objective: To study the effect of yoga therapy on physical and psychological symptoms of perimenopause.

Materials and Methods: It is a prospective non-randomized control study of 56 perimenopausal women with 12 weeks of intervention. The subjects were divided in two groups with either yoga therapy [n = 28] or exercise [n = 28] as the interventional tool. The symptoms control and QOL before and after intervention in both the groups were assessed by using the MENQOL which is standardized questionnaire.

Results: The perimenopausal symptoms in all domains were improved by yoga therapy, thus significantly improving the overall QOL compared to the control group.

Conclusion: This study clearly demonstrates the effectiveness of yoga therapy in managing the distressing perimenopausal symptoms. It is easy, safe, non-expensive alternative therapy helping the well-being of perimenopausal women and must be encouraged in the regular management of perimenopausal symptoms.

Key Words: MENQOL questionnaire, perimenopausal QOL, yoga therapy.

INTRODUCTION

Menopause is an important event in the life of a women when reproductive capacity ceases. During this transitional phase, woman exhibits severe and multiple symptoms. Frequently reported symptoms fall into several categories, including physical disturbances such as hot flushes, psychological complaints such as mood swings, and other changes that may impair personal or social interactions and diminish the overall quality of life.^[1] It was seen that in 1990, there were an

estimated 467 million women in this state and this number is expected to increase to 1,200 million by the year 2030. ^[2]

According to the Indian Menopause Society ^[3] there will be a large increase in the perimenopausal women in India also. Most women in India over the age of 45 years do not understand the changes taking place in their bodies and spend their valuable years of life battling problems and diseases associated with perimenopause. Hence it becomes very important to develop methods and treatment plans to control perimenopausal symptoms and thereby to improve the quality of life of this large group of women.

DIFFERENCE BETWEEN PERIMENOPAUSE AND MENOPAUSE: Perimenopause is the period of a woman's life shortly before the occurrence of menopause. A woman's body will be going through the process of menopause meaning the hormone production from the ovaries is beginning to decline.

SYMPTOMS: The common symptoms include

- Irregular menses - As ova production in ovary reduces oestrogen production becomes erratic leading to Irregular menses
- Hot Flashes - Due to blood vessels dilation near the skin as a result of reduced estrogen
- Night sweats - Due to hot flashes
- Weight gain - oestrogen deficiency leads to weight gain
- Mood swings - Perimenopause has increased risk of depression
- Breast tenderness - Due to oestrogen induced water retention
- Alteration of blood cholesterol - Elevated oestrogen favours high density lipoprotein which reduces blood cholesterol
- Low bone density - oestrogen is involved in maintaining equilibrium of calcium in bone

BENEFITS OF YOGA IN PERIMENOPAUSAL WOMEN:

1. It relieves stress: yoga can also help women better manage and support Overall mood
2. A consistent practice may reduce blood pressure: Some research shows blood pressure may increase after menopause due in great part to the hormonal changes that take place in the body. Fortunately, yoga is a traditionally utilized antidote. A consistent practice may help promote better oxygenation and blood circulation throughout the body.
3. Yoga promotes good joint health: Research shows a frequent, and consistent yoga practice may help relieve joint pain Not all menopausal women have arthritis, but the condition does increase with age.
4. Yoga may help lead to fewer hot flashes.

NEED OF STUDY

Yoga, the traditional Indian body-mind science has been used effectively in various health disorders affecting almost all the major organ system including cardiovascular, respiratory, neuroendocrine, gastrointestinal and musculoskeletal system. ^[12-15] Since perimenopause also affects several organ systems, this study is conducted to evaluate the effects of yoga therapy on menopausal symptoms.

AIM

- To study the effects of Yoga Therapy on Physical and Psychological Quality of Perimenopausal Women

OBJECTIVE

- To study the effects of Yoga Therapy on Physical Quality of Perimenopausal Women
- To study the effects of Yoga Therapy on Psychological Quality of Perimenopausal Women

HYPOTHESIS

1) NULL HYPOTHESIS

There are no significant effects of Yoga Therapy on Physical and Psychological Quality of life Perimenopausal Women.

2) EXPERIMENTAL HYPOTHESIS

There are significant effects of Yoga Therapy on Physical and Psychological Quality of life Perimenopausal Women.

METHODOLOGY

Study Design: An Experimental Study

Source Of Data: Near Ahmedabad

Population: Perimenopausal Women

Sampling Method: Random Sampling

Duration Of Study: 3 Months

Sample Size: 56

Materials and Tools Used:

1. Consent form
2. Pen,
3. Pencil
4. Paper
5. Plinth and
6. Pillow
7. Assessment form

Inclusion Criteria:

1. Aged between 40-50 years,
2. Subjects willing to participate,
3. Subjects able to practice yoga or exercise protocols and,
4. Subjects who are having perimenopausal symptoms.

Exclusion Criteria:

1. Women who were already practicing yoga for a month or more,
2. Women with surgical menopause and receiving any kind of hormone therapy and
3. Active psychological disorders or any other medical disorders.

Outcome Measures:

MENOPAUSE-SPECIFIC QUALITY OF LIFE QUESTIONNAIRE (MENQOL) ^[13]

The self-administered questionnaire utilized in this study included socio-demographic information with menstrual history and the menopause-specific quality of life questionnaire (MENQOL). MENQOL is a self-administered, 'scaled' 29-item survey questionnaire, designed to measure quality of life in menopausal women and also to measure the extent to which an individual is affected by menopausal symptoms. It comprises the four domains, Vasomotor, Psychosocial, Physical and Sexual, which are graded separately.

Procedure:

This interventional study included 56 perimenopausal women divided into two groups. One group practiced yoga therapy (test group, n = 28) and the other practiced a set of physical exercise (control group, n = 28).

The subjects were from local community and recruited through personal contacts with various women's organizations, clubs and self-help groups. The informed oral consent was obtained from the subjects before starting the intervention.

After taking informed consent patients were divided into 2 groups by simple random sampling method and treatment was given for 3 months.

Group A: Subjects of these group received Yoga therapy.

Group B: Subjects of these group received conventional treatment (Exercise Program).

The intervention program in both groups were started by collecting the baseline data, teaching and practicing the respective protocols for 45 minutes every day, follow-ups and collection of post-interventional data after 12 weeks of practice.

FLOW CHART OF THE STUDY PROCEDURE

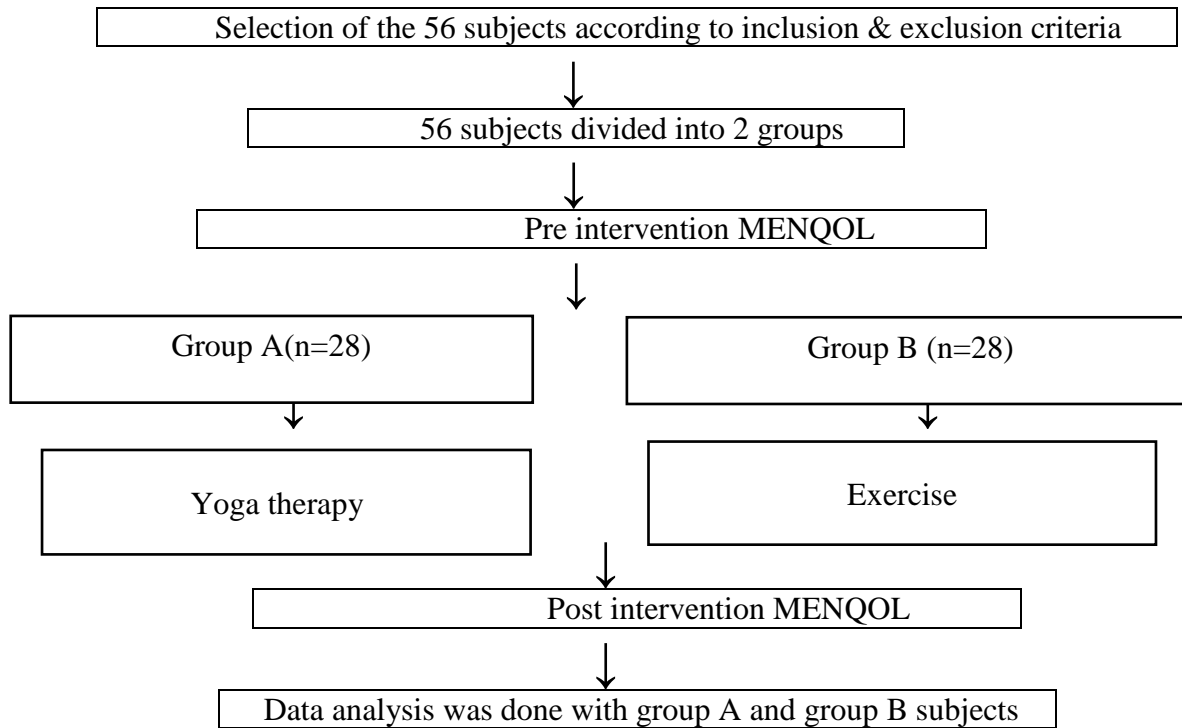


Figure 1: Flow chart of study Procedure

The yoga therapy module used was developed on the basis of Patanjali yoga ^[16] and Hatha yoga ^[17] to address the physical, psychological and emotional symptoms with suitable practice of asanas, pranayama and dhyana to result in improvement of overall quality of life. The control group practiced a set of exercise program. ^[18]

GROUP A: YOGA THERAPY (TEST GROUP)

1. ASANAS (Body postures)

- Sitting: Vajrasana, supta vajrasana Pascimottanasana, Poorvatanasana, Janusirsasana, Upavistakonasana, Baddhakonasana, Vakrasana, Ashvinimudra.
- Standing: Tadasana, Trikonasana, Parshvakonasana.
- Lying on the back (supine): Pavanamuktasana, Padottanasana.
- Lying on the stomach (Prone): Bhujangasana, Shalabhasana, Dhanurasana, Paryankasana.



Figure 2: Asanas

2. PRANAYAMA (Breathing practices)

- Anuloma-viloma (alternative nostril),
- Surya bhedana (right nostril),
- Chandrabhedana (left nostril),
- Sheetali (through tongue) and
- Bhramari (honey bee sound during exhalation).

3. Relaxation: Deep relaxation in shavasana (corpse pose).

4. Meditation: 'So Ham' dhyana sitting in meditative postures like swastikasana

GROUP B: EXERCISE INTERVENTION (CONTROL GROUP)

1. Loosening exercises:

- Sitting: Passive rotation of toes, Toe bending, Ankle bending, Ankle rotation, Knee bending, Knee rotation, Knee cap tightening, Half butterfly, Full butterfly, Neck bending, Neck rotation.
- Standing: Waist rotation, Wrist rotation, Shoulder rotation.
- Each one repeated for 10 rounds or 10 rotations.

2. Strengthening exercises (While standing/ Sitting).

- Wrist — Stretching arms straight in front, make the tight fist, palm facing down, move the fist up and down vigorously from the wrist-10 times.
- Palms — Holding near the chest bending at the elbow, spread the fingers, and move palms up and down vigorously from the wrist.
- Fingers — Throwing out the arms in front, give the fingers of both the arms the shape of the hood of cobra, stiffen the entire length of the arms from the shoulder joints to the finger tips till they start trembling-5 times.
- Elbows — Stretch the arms straight down beside the body, make the tight fist of the palms, and raise the fists forward up to the level of the shoulder with a jerk-10 times.
- Arms — Make the fists of hands with thumb tucked in, bend the elbow and raise the forearms till they parallel to the ground, push both the arms forward forcefully and vigorously to the level of the shoulder-10 times.



Figure 3: Strengthening Exercise of wrist

- Back — Spreading the legs apart as far as possible, place the hands on the hips bend backward from the waist as far as possible and then forward without bending the knees till head reaches the ground-5 times.
- Thighs — Stretch out the arms facing down straight in front at the shoulder heights, inhaling bend the knees till thighs come parallel to the ground, and then come up exhaling-5 times.
- Calves — Stretch out the arms facing down straight in front at the shoulder heights, inhaling squat and go down as far as possible-5 times. Supine rest 5 to 10 minutes.

RESULT

Statistical analysis

All pre and post data were analyzed by using SPSS Version 16. The individual variables were evaluated to determine the changes in two groups after 12 weeks. The pre and post data of MENQOL questionnaire was analyzed.

The effectiveness was calculated as 'within the group' (yoga and control group), 'between the groups' (yoga vs. control).

Sr. No.	Variables	Yoga	Control
1	Age	47.03 ± 2.56	47.54 ± 2.17
2	BMI	26.08 ± 3.07	26.89 ± 3.45
3	Menstruation regular	6	8
4	Menstruation irregular	13	11
5	No Menstruation	9	9

Table 1: Demographic Data

The largest categories of women were between 46 and 50 years of age. No significant difference was observed between the groups regarding body mass index and menstrual history is shown in Table 1. There was no significant difference between the groups ($P > 0.05$). In the psychosocial domain, large number of women from both the groups (72% to 79%) complained experiencing poor memory as the most prevalent symptom followed by feeling of anxiety, loneliness, depression and impatience. Two of the questions in this domain that is being dissatisfied with personal life and accomplishing less what I used to do were recorded more significantly by control group compared to the yoga group ($P < 0.05$) while other attributes from this domain were all comparable ($P > 0.05$). All the symptoms in the physical domain except for flatulence and muscles and joint pains were comparable in both groups without any significant difference.

Groups	Within group analysis	Mean Difference	Standard Deviation	"t" Value	"p" Value
Group A	Pre-Test				
	Post Test	-1.59	0.64	-8.9	$P < 0.05$
Group B	Pre-Test				
	Post Test	-0.68	0.18	-7.09	$P < 0.05$

Table 2: Paired "t" test values for MENQOL

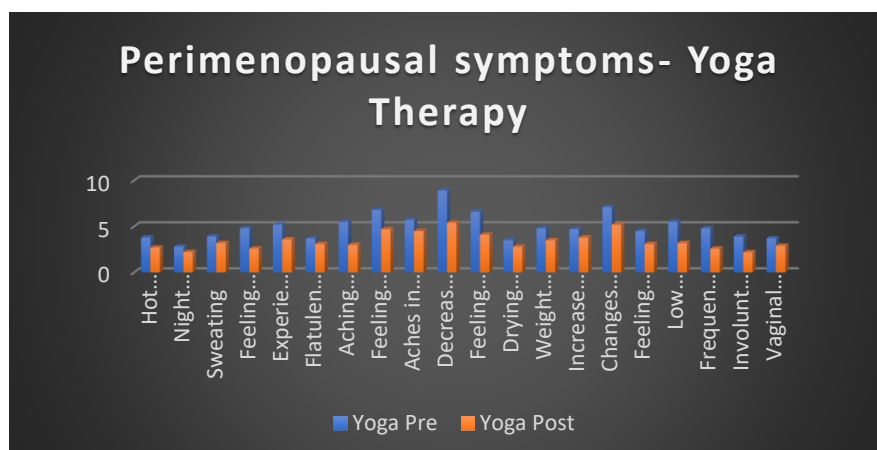


Figure 4: Yoga therapy and effect on Perimenopausal symptoms

The results of effect of yoga therapy (test group) and exercise (control group) on the symptoms of all the two domains are presented in Table 2. In the psychosocial domain, yoga therapy resulted in the significant difference in all the symptoms while exercise therapy resulted in the improvement of four symptoms but failed to provide relief for the remaining symptoms. All the symptoms in the physical domain were significantly improved in yoga group. In control group, highly significant ($P < 0.05$) decrease was observed only in one symptom and moderate in other six symptoms. The symptom of aching in muscles and joints was relieved somewhat after physical exercise and no significant change was observed in the remaining symptoms.

Outcome Measures	“t” Value	“p” Value
MENQOL	-3.48	$P < 0.05$

Table 3: Independent “t” test values

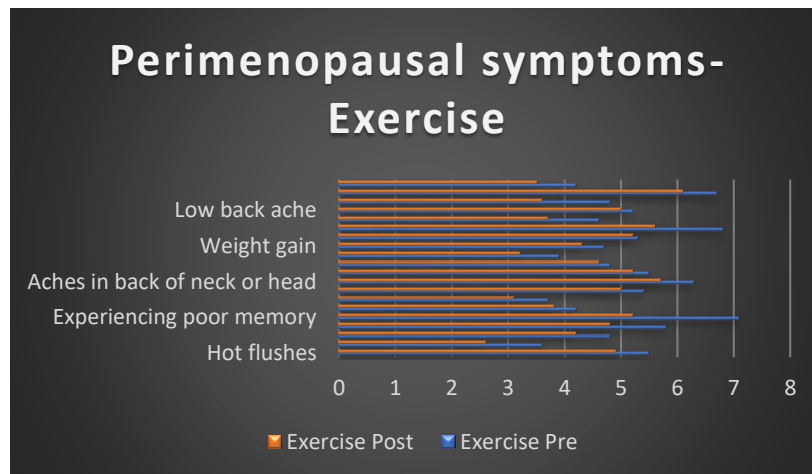


Figure 5: Exercise and effect on Perimenopausal symptoms

The effect size’ was greater in yoga therapy group in all domains compared to the control group. ‘Between the group effect’, there was significant difference between the groups in all domain ($P = 0.53$) [Table 3]. The overall quality of life is measured by the mean of overall scores of each domain and yoga therapy group showed a very significant improvement ($P < 0.05$) compared to control group.

DISCUSSION

The present study thus clearly documents the significant presence of various perimenopausal symptoms in the local population severely affecting the quality of life. Many of these women expressed their distress and helplessness regarding these symptoms, which were seriously interfering in their day-to-day living. Thus, there is a need to search and develop a cost-effective, simple, community-based therapeutic tool to provide symptom relief and to improve health status, and in this perspective yoga has emerged as the appropriate system to deal effectively with issues related to perimenopause.

The present study clearly demonstrates the clinical utility of yoga in significantly reducing the perimenopausal symptom in all domains and thereby improves the overall quality of life. Asanas, pranayama and dhyana, the components of yoga therapy, seem to improve the symptom profile in the all domains through several physiological and biochemical mechanisms. The improvement in physical strength and fitness caused by yoga seems to be related to several factors like muscular strength and endurance, flexibility, cardiorespiratory fitness, body composition and pulmonary function.^[19] The intense stretching and muscle conditioning associated with attaining and holding yoga postures increases the skeletal muscle oxidative capacity and decrease glycogen utilization, possibly caused by increased vascularization, increased intramuscular oxygen and glycogen stores or by increased numbers of mitochondria.^[20] Yoga practice also may increase the absorption of the calcium from the intestine, stimulate bone remodeling and maintain the load bearing capacity of the bone; reduces the pain in the back of the head, neck, lower back and headache by influencing limbic system modulation of endogenous pain control system.^[21]

This impact of yoga seems to be due to its effect on the functioning of nervous system leading to increase in alpha rhythm, intra hemispheric coherence and homogeneity in the brain ^[22,23] and increase in P 300 phase amplitude ^[19] all of which seems to enhance the cognitive processes. Menopausal anxiety can be a very difficult symptom to manage, but yoga therapy showed significant improvement compared to physical exercise. Several mechanisms like altered neurotransmitters, changed brain blood flow and brain metabolism and sympathetic activation seems to be responsible for this improvement brought by yoga practice. ^[24]

Compared to physical exercise group, yoga showed most significant effect in managing the symptoms of vasomotor domain. All the three symptoms in this domain, that is, hot flushes, night sweats and sweating were significantly reduced in the yoga group while no improvement was observed in any of the symptoms in control group. Especially, the improvement in hot flushes through yoga was very rewarding, since this is most difficult symptom to manage and affects the overall quality of life. The vasomotor symptom improvement brought about by yoga intervention seems to be due to its effect in modulating autonomous nervous system with special attention to decreased sympathetic nervous system activation ^[25] which in turn seems to affect the thermoregulation resulting in vasodilatation and sweating. ^[26]

The yoga postures used in this study are known to improve the tone of the muscles of pelvic region and enhance the blood circulation to the urogenital area. ^[27] Thus, yoga improved most of the symptom profile thus contributing significantly in the improvement of overall quality of life. Yoga is relatively simple to learn and is economical, non-invasive with multiple collateral lifestyle benefits. Group and individual practice may also help to improve lifestyle choices and health-related attitudes in part, by enhancing psychological well-being and thereby contributing significantly to chronic disease protection and health promotion.

Though most of the clinical effects of yoga are probably brought about by vagal stimulation and parasympathetic activation, the complete mechanisms underlying the reported benefits remain poorly understood. Clearly, additional high-quality research is warranted to confirm and further explore the putative beneficial effects of yoga in perimenopausal women.

CONCLUSION

This study clearly demonstrates the effectiveness of yoga therapy in managing the distressing perimenopausal symptoms. It is easy, safe, non-expensive alternative therapy helping the well-being of perimenopausal women and must be encouraged in the regular management of perimenopausal symptoms.

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