

# Yoga as an Alternative Therapy for Women with Menopausal Symptoms

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## Abstract

*Background:* Menopause is a part of every woman's life. It is the stage when the menstrual period permanently stops. This stage usually occurs between 40 and 60 years associated with hormonal, physical and psychological changes. These changes can occur gradually or abruptly and can start as early as 30 years and last until as late as 60 years. It can also occur when the ovaries are removed or stopped functioning. *Aim:* This study aimed to evaluate the effectiveness of yoga as an alternative therapy for women with menopausal symptoms. *Methods:* A prospective randomized interventional study was conducted in selected villages at Kattankulathur Block, Chennai, Tamil Nadu, India. Simple random sampling technique was used to select study participants. Of 260 menopausal women, 130 were randomly allotted to the study group and 130 to the control group. The study group received yoga training program which consists of yogasanas, pranayama (Breathing exercise) and meditation. The study group underwent yoga training for 5 consecutive days and menopausal women practiced yoga daily for 35-40mins / day along with group yoga practice 2 days in a week for 12 weeks under the supervision of Investigator. Assessments were made by five point rating scale ( to assess the physical and psychological symptoms ) based on Standardized Menopause Rating Scale. *Result:* After 12 weeks of yoga practice, the physical symptoms of menopausal women were reduced to greater extent in study group than in control group at  $p=0.001$  level of significance. There was significantly better improvement in the psychological symptoms of menopausal women in study group ( $p=0.001$ ) than in control group. *Conclusion:* The present study concluded that yoga is an effective intervention in reducing the physical and psychological symptoms of menopausal women. Yoga's approach to holistic health is powerful tool for helping the women experience the passage into menopause as a positive event, both physically and spiritually.

**Keywords:** Menopause; Physical Symptoms; Psychological Symptoms; Yoga.

## Introduction

Menopause is a natural life event. Menopause is an important period in the female life cycle. Menarche signals the passage from girl to woman whereas

menopause marks a woman's passage to wise woman elder. At about 40 years, a woman's body begins to prepare for the menopausal transition. Several women have discovered this as much more than a physical transition from the childbearing to the non-child bearing years. Menopause is an

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opportunity for the fullest blossoming of a woman's power, wisdom and creativity. It is a bridge to a new phase of life when many women report feeling more confident, empowered and energized [1].

The term "menopause" is derived from the Greek word, means 'cessation of periods'. Menopause occurs due to cessation of ovarian function. Prior to cessation, there is a period of 1 or 2 years of failing or declining ovarian function which is known as climacteric or premenopausal stage. The word menopause and climacteric are used interchangeably. Climacteric also indicates a 'change of life' from reproduction to non-child bearing age. The age of menopause varies from 45 to 55 years. In some woman, it may be 51 or 52 years. Premature menopause is defined as cessation of menstruation at 35 years, which is uncommon and abnormal. Surgical menopause occurs when the uterus or the ovaries are removed or destroyed by radiation or chemotherapy. It has been reported that smokers attain menopause at an earlier age than non smokers and also in those with malnourishment [2].

The onset of menopause has been estimated to commonly occur between 45 and 55 years, with a worldwide average of about 51 years. According to the National Family Health Survey conducted in 1988 and 1999, the mean age of onset of menopause in Indian women is about 44.3 years. With the average lifespan of a woman increasing in the recent years (average life expectancy of woman in 2025 is 72 years), it can be concluded that a considerably large number of women will lead one third of their life in the postmenopausal stage. These facts necessitate a need to understand and address the concerns of the postmenopausal women in a better and sophisticated way to help such women lead a healthy and happy life [3].

As life expectancy increases, a female may expect to spend approximately one third of her life as a postmenopausal person. An estimated 42.9 million women over 50 years attained menopause in the United States (U.S) in 2000. By 2020, this number is estimated to increase to 45.9 million. At present, a 54 year woman may have the life expectancy of 84.3 years. About two third of the U.S population may have the life expectancy of  $\geq 85$  years. No data exist on the number of women attaining menopause in a given year. Based on the assumptions on spontaneous, premature, surgical and induced menopause, it is estimated that, approximately 4200 attain menopause per day in the United States [3,4].

A wide array of symptoms and signs are observed in women during menopause. The common symptoms associated with menopause and estrogen

deficiency include: hot flushes, excessive perspiration, mood swings, depression, anxiety, insomnia, frequency of urination, nocturia, vaginal dryness, leucorrhoea, pruritis, backache, muscle weakness, joint pain, memory loss, dementia, dental problems, skin changes and hirsutism. The above symptoms are age related and aggravated by stressful life. A caring Gynecological nurse must adopt a holistic approach and tender advice regarding diet, lifestyle and relaxation techniques to alleviate menopausal symptoms. Furthermore, she should also provide a health checkup and educate these women on benefits of preventive gynecology and cancer screening and that maintenance of optimum health is very essential to maintain ones physical independence and to avoid becoming a burden to the family [5,6].

Bachmann reported that, vasomotor symptoms are the most common medical complaint of perimenopausal and postmenopausal women. Frequent vasomotor symptoms can be disabling, affecting a woman's social life, psychological health, sense of well-being and working ability. Women with hot flushes are more likely to experience disturbed sleep, depressive symptoms and significant reduction in quality of life as compared to asymptomatic women. Despite the prevalence and impact of these symptoms, the pathophysiology of hot flushes is unclear; however, estrogen withdrawal seems to play an important role. It is postulated that declined estrogen concentration may lead to changes in brain neurotransmitters and instability in the hypothalamic thermoregulatory center. The most effective therapy for relieving vasomotor symptoms and reducing their impact on quality of life is hormone therapy. Alternative therapies for those who decline hormone therapy include selective serotonin reuptake inhibitors and related agents. Most herbal therapies evaluated in placebo-controlled trials have shown no clinically significant benefit [7].

Yoga is an original and ancient holistic art of living that includes physical, mental, moral and spiritual spheres. Yoga is not a religion but rather a philosophy of living. Yogic life style is a way of living, which aims to improve the body, mind and day to day life of individuals. Patanjali muni, the founder of yoga described eight limbs of yoga such as Yama, Niyama, Asana, Pranayama, Pratyahar, Dharana, Dhyana and Samadhi as a practical way to evolve mind, body and spirit to achieve balance and harmony. Over the last few years, yoga has spread all over world and has been studied so as to help people to cope with various health conditions including menopause. The most commonly performed yoga practices are postures, controlled

breathing (pranayama), and meditation (dhyana) [8,9].

Yoga stretches can benefit both the body and mind, bringing energy and balance. This is particularly helpful to women who are currently in menopause or in menopause transition because their hormonal levels and body chemistry may be fluctuating rapidly. Yoga exercises level out this physiological instability by relaxing and gently stretching every muscle in the body, promoting better blood circulation and oxygenation to all cells and tissues. This helps to optimize the function of the endocrine glands and the organs of the female reproductive tract. Yoga exercises also improve the health and overall well being [10,11,12].

Achieving hormonal balance during the menopausal years is essential for good health. Yoga has several benefits when compared to other physical exercises and yoga postures and breathing practices are not only effective on the muscles and bones, but also on the organs and glands. Practicing yoga can help prevent or reduce the common symptoms that affect women particularly during the menopausal years and improve the overall wellbeing. In addition, it is important to consider that all menopausal symptoms are inter related, and practicing yoga reduces the unpleasant effect of one symptom generally leading to better health. Every pose has a multitude of effects on all the systems of the body [1].

The present study aims to evaluate the effectiveness of yoga as an alternative therapy for women with menopausal symptoms in selected villages, Kattankulathur Block, Chennai. Tamil Nadu.

## Methodology

A prospective randomized interventional study was conducted in selected villages at Kattankulathur Block, Chennai, Tamilnadu, India covering 39 villages with a population of 2,18,000. Simple random sampling technique [13,14] was used to select the study participants. At first stage, 10 villages were selected using lottery method. During the second stage of sampling, the address list of all the women aged between 45-55 years was obtained from Primary Health Centre (PHC). In the third stage, out of established list, women with stressful physical and psychological symptoms were selected randomly by lottery method. Of 260 menopausal women, 130 of them were allotted to study group and 130 to the control group. Inclusion criteria for sample selection includes women who attained permanent cessation

of menstruation, women with age group of 45-55 years and those with physical and psychological symptoms such as hot flushes, sweating, insomnia, anxiety and depression. Exclusion criteria includes women with gynecological problems (fibroid uterus, dysfunctional uterine bleeding, prolapsed uterus), those on hormone replacement therapy and on medical treatment for relieving menopausal symptoms.

### *Ethical Consideration*

Formal approval was obtained from the Institutional review board and Institutional ethical committee of SRM University, Kattankulathur, Chennai, Tamil Nadu, India. Both written and verbal information were provided to the study participants in their local language. Women were requested to participate voluntarily in the study. Thorough explanation was provided on the objectives, practices, goodness, problems and time period involved in practice. In addition, they were informed of their right to withdraw at anytime during the course of the study.

### *Data Collection Instruments*

The questionnaire for present research study comprised of three sections. Section I pertained information regarding demographic data like age, religion, marital status etc. Section II comprised of five point rating scale to assess the physical symptoms of menopausal women based on Standardized Menopause Rating scale (MRS) [15]. Section III included five point rating scale to assess the psychological symptoms of menopausal women based on Standardized Menopause Rating scale (MRS) [15].

Five point rating scale consists of 20 items pertaining to physical as well as psychological symptoms of menopausal women with a severity ranging from 0-4 (0-No symptoms, 1-mild symptoms, 2-moderate symptoms, 3-severe symptoms, 4-very severe symptom). The participants were asked to indicate the level of severity of symptoms in the scale provided. The reliability of the tool was obtained by test-retest method and a reliability coefficient of 0.76 and 0.77 was found to be statistically significant for physical and psychological symptoms respectively.

### *Yoga Intervention*

The study group received yoga training programme under the trained yoga Instructor

(Investigator). The yoga programme comprised the following:

- i. Yogasanas (Tadasana, Ardhakati chakrasana, Badrasana, Paschimothasana, Bhujangasana, Ardha Salabhasana, Ardhalasana and Shavasana) for 5 times for 25- 30 mins.
- ii. Pranayama Breathing exercises (Nadhisodhana pranayama and Sitali Pranayama) were repeated 8-10 times for 5- 10 mins.
- iii. Om Meditation: Women were asked to chant Om during meditation for 5-10 mins. It is believed to contain cosmic energy that helps to relieve a person's individual suffering. It also helps to enhance memory function, better interpersonal relationships, more restful sleep and significant stress reduction.

Initially, intensive training on steps of yoga was taught to menopausal women in study group for 5 consecutive days for 1½ hours per day by Investigator. After the 5 days intensive yoga training, the menopausal women practiced yoga at home on their own for 35-40 mins a day and they practiced group yoga for 2 days in a week under the supervision of investigator till 12 weeks. The investigator distributed instructional manual on steps of selected yoga practice for their self reference at home after the 5 days continuous yoga practice. Daily yoga practice diary was used to verify the regular performance of yoga by the menopausal women. The menopausal women in the control group did not participate in the yoga programme. But, after the course of the study, they also have been given with intensive yoga training for 5 days by the Investigator.

#### Statistical Package

Statistical Package for Social Sciences (SPSS) version 16 (IBM, Chicago, USA), and Instat were used for data analysis. Independent 't' test was used for comparison of values of the study and control groups. P value less than 0.05 was considered

statistically significant.

#### Results

Of 260 participants, 2 in the study group and 4 in the control group withdrew from the study due to change of residency, family functions and illness. Data analysis was done for remaining 254 participants (128 in the study group and 126 in control group).

The baseline values were not significantly different between the study and control groups for all the demographic variables including age ( $p=0.94$ ), religion ( $p=0.74$ ), marital status ( $p=0.91$ ), type of family ( $p=0.67$ ), availability of support system ( $p=0.52$ ), age of menarche ( $p=0.40$ ) and parity ( $p=0.47$ ).

Regarding the physical symptoms of menopausal women, most of the participants 88( 68.8%) in the study group had severe physical symptoms in the pretest, where as in the post test, maximum of them 75(58.6%) had mild symptoms after 12 weeks of yoga practice. However, in the control group, 75(59.5%) of them had severe symptoms in pre test and 77(61.1%) of menopausal women had severe symptoms in the post test (Table 2).

The baseline physical symptoms were not significantly different between both the groups ( $p=0.36$ ). After 12 weeks of yoga practice, the 't' value was 18.53 which was extremely significant at  $p=0.001$  level ( Table.3).

It is inferred from the table 4 that, 77 women (60.2%) in study group had severe psychological symptoms in the pre test, but in the post test, moderate symptoms were seen in 68(53.1%) in the study group, where as in control group, 72(57.1%) and 74(58.7%) had severe symptoms in pretest and post tests respectively ( Table. 4).

As shown in Table 5, there was no statistically significant difference in the baseline values of psychological symptoms of menopausal women in study and control groups ( $p=0.89$ ). However in the

**Table 1:** Demographic Variables of Menopausal Women

N=254

Demographic Variables	Study group (n=128)		Control group (n=126)		P value
	n	%	n	%	
Age (mean±SD)	49.42±2.71		49.41±2.70		$\chi^2=0.38$ $p=0.94$
Religion					
Hindu	87	68	80	63.5	
Muslim	18	14	21	16.7	$\chi^2=0.59$
Christian	23	18	25	19.8	$p=0.74$
Marital status					
Married	91	71.1	88	69.8	
Separated	13	10.1	13	10.3	$\chi^2=0.55$
Widow	12	9.4	15	11.9	$p=0.91$
Single	12	9.4	10	8	

<b>Type of family</b>					
Joint family	43	33.6	36	28.6	$\chi^2=0.79$ $p=0.67$
Nuclear family	80	62.5	84	66.7	
Extended family	5	3.9	6	4.8	
<b>Availability of support system</b>					
Self group	36	28.1	29	23.0	$\chi^2=2.27$ $p=0.52$
Friends	29	22.6	24	19.0	
Relatives	55	43.0	66	52.4	
Others	8	6.3	7	5.6	
<b>Age of menarche (mean±SD)</b>	13.19±1.95		13.37±2.01		$\chi^2=1.83$ $p=0.40$
<b>Parity</b>					
Nullipara	5	3.9	4	3.2	$\chi^2=2.71$ $p=0.47$
Primipara	54	42.2	64	50.8	
Multipara	62	48.4	49	38.9	
Grand multipara	7	5.5	9	7.1	

**Table 2:** Frequency and percentage distribution of physical symptoms of menopausal women in the study and control group N=254

Physical symptoms	Study group(n=128)		Control group(n=126)	
	n	%	n	%
<b>Pre test</b>				
No symptoms	-	-	-	-
Mild	-	-	-	-
Moderate	24	18.7	35	27.8
Severe	88	68.8	75	59.5
Very severe	16	12.5	16	12.7
<b>Post test</b>				
No symptoms	-	-	-	-
Mild	75	58.6	-	-
Moderate	53	41.4	33	26.2
Severe	-	-	77	61.1
Very severe	-	-	16	12.7

**Table 3:** Comparison of pre test and post test mean and standard deviation of physical symptoms of menopausal women between the study group and control group N=254

Physical symptoms	Study group (n=128) Mean±SD	Control group (n=126) Mean±SD	Student's Independent 't' test
<b>Pre test</b>	47.75±13.13	46.13±12.56	t=1.01 p= 0.36 df=252
<b>Post test</b>	20.89±8.53	47.15±13.53	<b>t=18.53 p=0.001***</b> <b>df=252</b>

\*\*\* Extremely high significance at Pd"0.001

**Table 4:** Frequency and percentage distribution of psychological symptoms of menopausal women in the study and control group N=254

Psychological symptoms	Study group(n=128)		Control group(n=126)	
	n	%	n	%
<b>Pre test</b>				
No symptoms	-	-	-	-
Mild	-	-	-	-
Moderate	51	39.8	54	42.9
Severe	77	60.2	72	57.1
Very severe	-	-	-	-
<b>Post test</b>				
No symptoms	-	-	-	-
Mild	48	37.5	-	-
Moderate	68	53.1	52	41.3
Severe	12	9.4	74	58.7
Very severe	-	-	-	-

**Table 5:** Comparison of pre test and post test mean and standard deviation of psychological symptoms of menopausal women between the study group and control group N=254

Psychological symptoms	Study group (n=128) Mean±SD	Control group (n=126) Mean±SD	Student's Independent 't' test
Pre test	42.79±10.04	42.95±9.50	t=0.13 p=0.89 df=252
Post test	26.98±11.35	43.21±9.42	t=12.38 p=0.001*** df=252

\*\*\* Extremely high significance at  $P < 0.001$

post test, the 't' value was 12.38 at a extremely significant value of  $p=0.001$ .

### Discussion

Menopause is an opportunity for the fullest blossoming of a woman's power, wisdom and creativity. It is a bridge to a new phase of life when many women report feeling more confident, empowered and energized. Menopause is a metamorphosis, a complete change at the cellular level. The spiritual science of yoga recognizes that equilibrium in the physical body helps bring emotional balance and mental clarity. Yoga supports a new archetype that depicts older women as wise, strong, healthy and intuitive [1].

In this present study, the comparison of psychological symptoms of menopausal women between the groups showed that physical symptoms and psychological symptoms of menopausal women were assessed. In the study group, most of the participants 88(68.7%) had severe physical symptoms in the pretest, whereas, it was greatly reduced to mild symptoms and no one had severe symptoms in the post test. After 12 weeks of yoga practice, the physical symptoms of menopausal women were reduced to greater extent in study group than in control group at  $p=0.001$  level of significance. The menopausal women in the study group had 33.6% reduction of physical symptoms from the baseline values.

The study findings are consistent with those of *Joshi S and Khandwe R*, on effectiveness of yoga on menopausal women. Menopause Rating Scale was used for assessing the menopausal symptoms. The study group performed yoga (asanas, meditation and pranayam) under supervision for 3 months. They are compared with control group with no yoga practice. The findings showed a reduction in score which was statistically significant. The study concluded that, yoga is effective in reducing menopausal symptoms [16].

*Afonso et al*, conducted a randomized clinical trial on efficacy of yoga in decreasing insomnia in postmenopausal women. Postmenopausal women not undergoing hormone therapy, who were 50-65 years old, who had an apnea-hypopnea index less than 15, and who had a diagnosis of insomnia were randomly assigned to one of three groups as follows: control, passive stretching and yoga. Questionnaire were administered before and four months after intervention to evaluate quality of life, anxiety, and depression symptoms. Climacteric symptoms, insomnia severity, day time sleepiness and stress. The reduction in insomnia severity in the yoga group was significantly higher than that in the control and passive stretching groups. The study concluded that, yoga might be effective in reducing insomnia and menopausal symptoms as well as improving quality of life in postmenopausal women with insomnia[17].

The comparison of psychological symptoms of menopausal women between the groups showed that, there was significantly better improvement in the psychological symptoms of menopausal women in study group ( $p=0.001$ ) than in control group. The psychological symptoms were decreased to 19.8% from the pre test in study group after the practice of yoga for 12 weeks.

The study findings were consistent with the study conducted by *Mouloud Agajani Delavar* on probable effect of yoga on menopausal syndromes. A total of 47 post menopausal women aged 45-63 years participated in a 12-week restorative yoga intervention. Assessments were administered before intervention at 4, 8, and 12 weeks of yoga program. Post-treatment measure included 20-item checklist that embedded menopause symptoms within a list of every day complaints experienced at 2 weeks before interview. Questions were scored on a scale of 0-3 depending on the effect of yoga in these women. Breathing exercises, postures, and relaxation poses designed specifically for menopausal women were taught by a certified yoga teacher. Significant pre- to post-treatment improvement was analyzed for total scores on menopause questionnaire. There was

significant effect on mean hot flush score. No adverse events were observed. The results suggested that yoga is powerful technique that can help menopausal women accept and nourish the inevitable change of life [18].

Yoga helps to modulate mood swings and reduce depression and anxiety by helping to balance a woman's changing hormones. Many symptoms commonly associated with menopause such as irritability, depression, and pains are intensified by the inability to cope with stress. Regular yoga practice on relaxing and restorative poses helps to ease these symptoms. Furthermore, yoga practice gives the opportunity to eliminate mental and emotional debris that is considered the root cause of several problems associated with menopause.

These results were consistent with the study findings of *Booth-LaForcea* on assessment of feasibility and efficacy of a yoga treatment for menopausal symptoms. The study included 12 peri- and post-menopausal women experiencing at least 4 menopausal hot flashes per day, for about 4 days per week. Assessments were administered before and after completion of a 10-week yoga program. Pre- and post-treatment measures included: Severity of questionnaire-rated menopausal symptoms (Wiklund Symptom Check List), frequency, duration, and severity of hot flashes (24-h ambulatory skin-conductance monitoring; hot-flash diary), interference of hot flashes with daily life (Hot Flash Related Daily Interference Scale), and subjective sleep quality (Pittsburgh Sleep Quality Index). Yoga classes included breathing techniques, postures, and relaxation poses designed specifically for menopausal symptoms. Participants were asked to practice at home 15 min each day in addition to weekly classes. Significant pre- to post-treatment improvements were found for severity of questionnaire-rated total menopausal symptoms, hot-flash daily interference; and sleep efficiency, disturbances, and quality. The yoga treatment and study procedures were feasible for midlife women [19].

Yoga has been used as a tool for physical, emotional and spiritual health for thousands of years. For women at midlife and beyond, yoga offers a primary form of menopause medicine that can help them cope with a wide range of symptoms without negative side effects. The yogic practices that support good health as a woman's body moves through menopause also help her to make the most of her passage into the wisdom years.

## Conclusion

Thus, the present study has shown that, yoga practice for 12 weeks reduced the physical symptoms and psychological symptoms of menopausal women. Moreover, it concluded that, yoga is an enjoyable alternative exercise in reducing the physical and psychological symptoms of menopausal women. Women who regularly practice yoga find that they are able to enjoy menopause and experience the freedom, liberation and energy that it brings. This study suggests that, yoga can be considered as a complimentary therapy or an alternative method for treating menopausal symptoms.

### *Implications for Practice*

- ♦ Yoga is a non-pharmacological intervention in treating the physical and psychological symptoms of menopause.
- ♦ Menopausal transition will be easier for the women who practice yoga regularly.
- ♦ Nurses in the community play a vital role in disseminating evidence based complimentary therapy to help the menopausal women in alleviating their problems. Evidence-based practice can facilitate quality improvement of women's health.
- ♦ Yoga can be preliminarily recommended as an additional intervention for women who suffer from psychological complaints associated with menopause.
- ♦ Yoga is popular as a complementary and alternative therapy which can be added to the scientific evidence so that gynaecologists can recommend it to their patients instead of prescribing hormone therapy.

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