



## A Prospective Randomized Interventional Study to Evaluate The Effect of Yoga on Quality of Life of Menopausal Women

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### ABSTRACT

*Background: Menopause is an opportunity for the fullest blossoming of a woman's power, wisdom and creativity. Aim: This study tested the effect of yoga on quality of life of menopausal women. Methods: The study was conducted in selected areas in Chennai, Tamilnadu. Simple random sampling technique was used for the study. Of 260 menopausal women, 130 of them were allotted to study group and 130 of them to control group. The study group underwent yoga training and practiced yoga daily for 35-40mins /day for 12 weeks. Standardized WHO QOL BREF Scale was used to assess the menopausal women's quality of life. Result: There was extremely high significant difference found in all domains of quality of life at  $p=0.001$  level between study group and control group at 12 weeks. Conclusion: The study concluded that, yoga is an effective intervention in improving the quality of life of menopausal women.*

**KEYWORDS : Yoga, menopause, quality of life**

### INTRODUCTION

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<sup>1</sup>. The onset of menopause heralds a time of diminished estrogen exposure, which may have both acute and chronic effect on health and quality of life. The majority of women report hot flushes developing with increasing severity in the menopausal transition and becoming incessant in the years following last menstrual period. Observational studies suggests that, as many as 75% of women will experience hot flashes after menopause. Left untreated, most women will have spontaneous cessation of hot flashes within 5 years, although some women continue to experience distressing symptoms for 30 years or more.<sup>2</sup>

Menopause is a normal occurrence in the life of every woman. The term is derived from the Greek, which actually means 'cessation of periods'. Menopause occurs due to cessation of ovarian function. Prior to cessation, there is a period, over 1 or 2 years of failing or declining ovarian function which is known as climacteric or premenopause<sup>3</sup>. It has been estimated that the onset of menopause usually begins between the ages of 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 (expected average lifespan of a 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. There were an estimated 42.9 million women over the age of 50 in the United States (U.S) in 2000. By 2020, the number of women over age 55 is estimated to increase to 45.9 million. A woman who reaches age 54 today may expect to survive to age 84.3 years.<sup>4,5</sup>

A wide array of symptoms and signs are observed in women during menopause which include: hot flushes, excessive perspiration, mood swings, depression, anxiety, insomnia, urinary symptoms like frequency, nocturia, vaginal dryness, leucorrhoea, pruritis, headache, muscle weakness, joint pain, memory loss, dementia, dental problems, skin changes and hirsutism etc. Many of the above symptoms are age related and aggravated by stresses of life. A caring Gynaecological nurse must adopt a holistic approach and tender advice regarding diet, lifestyle and relaxation techniques to alleviate menopausal symptoms.<sup>6,7</sup>

Menopause does not really require medical treatment since it is a natural biological process. The menopause treatments actually focus on relieving the symptoms of menopause and in preventing any chronic

condition that may occur during the postmenopausal years such as heart disease and osteoporosis. Some under HRT which provides a low dose of estrogen in the body which helps in alleviating the symptoms of menopause. However, HRT has some serious side effects and increases risk of heart problems. Exercising, proper diet, not smoking, and reduction of stress are also effective ways to make menopause more bearable and also facilitate in preventing any chronic ailments that can occur in the postmenopausal years.<sup>8,9</sup>

Quality of life (QOL) has been defined by the World Health Organization as the "individual's perceptions of their position in life in the context of the cultural and value systems in which they live and in relation to their goals, expectations, standards and concerns". It is a broad ranging concept incorporating in a complex way the persons' physical health, psychological state, level of independence, social relationships, personal beliefs and their relationships to salient features of the environment. This definition reflects the view that quality of life refers to a subjective evaluation, which is embedded in a cultural, social and environmental context. Quality of life is the main goal of health care and a significant factor for individual health and it is used to plan and evaluate health care programs. Nowadays, quality of life is considered an important outcome that reflects the impact of health conditions, diseases, and treatments from the subjective perspective of patients. Thus, the evaluation of quality of life is an important component in providing a more complete picture of the effects of menopause as well as evaluating the possible benefits of different treatments and therapies.<sup>10,11,12</sup>

Yoga is an original and ancient holistic art of living that includes physical, mental, moral and spiritual spheres. 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 as a practical way to evolve mind, body and spirit to achieve balance and harmony. The eight limbs are Yama, Niyama, Asana, Pranayama, Pratyahar, Dharana, Dhyana and Samadhi. Since the last few years, yoga has spread around the whole 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).<sup>13,14</sup>

Yoga stretches can benefit both the body and the 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 optimize the function of the endocrine glands and the organs of the female reproductive tract. Yoga exercises also improve the health and well being

of the digestive tract, nervous system and all other systems.<sup>15,16,17</sup>

The present study aims to evaluate the effectiveness of yoga on quality of life of menopausal women in selected villages, Kattankulathur Block, Chennai, Tamilnadu, India

**MATERIALS AND METHODS**

This was a prospective randomized interventional study. The study was conducted in selected areas at Kattankulathur Block, Chennai, Tamilnadu, India. Simple random sampling technique<sup>18,19</sup> was used for the selection of menopausal women in to the study. The total sample for the study comprised of 260 menopausal women. Out of 260 menopausal women, 130 of them were allotted to study group and 130 of them to control group. The inclusion criteria for sample selection includes a) women who attained permanent cessation of menstruation, b) women with age group of 45-55 years, and c) women who are presenting with physical and psychological symptoms such as hot flushes, sweating, insomnia, anxiety, depression, etc. The exclusion criteria include a) women with gynaecological problems like fibroid uterus, Dysfunctional uterine bleeding (DUB), prolapsed uterus etc b) women who are on Hormone replacement therapy and c) who are on medical treatment for relieving symptoms of menopause. Formal approval was obtained from the Institutional review board and Institutional ethical committee of SRM University, Kattankulathur, Chennai to conduct the present study. Both written and verbal information about the study were given in local language to women who participated in the present study.

The questionnaire for present research study comprises of two sections. Section I pertained information regarding demographic data like age, religion, marital status etc. Section II consisted of Standardized WHO QOL-BREF scale to assess the quality of life of menopausal women. The Tamil version of WHO QOL-BREF scale was used without any modifications for the study. The formal permission was obtained from World Health Organization for using the scale for present study. The scale contains 26 items under 4 domains such as physical domain, psychological domain, social domain and environment domain. Out of 26 items, 23 items were positively scored and 3 items (Item number 3, 4 and 26) were negatively scored in the scale. The first two items that were examined separately: Item 1 asked about an individual's overall perception of quality of life and Item 2 asked about an individual's overall perception of menopausal women's health. Other 24 items were included in the domains. Domain scores are scaled in a positive direction (i.e. higher scores denote higher quality of life). The mean score of items within each domain is used to calculate the domain score. Mean scores are then multiplied by 4 in order to make domain scores and subsequently transformed to a 0-100 scale using the formula. Domain wise interpretation of data was done by using various statistical methods.

**YOGA INTERVENTION**

The study group received yoga training programme under the Investigator. The yoga programme comprised the following:

- i. Yogasanas (Tadasana, Ardhakati Chakrasana, Badrasana, Paschimothasana, Bhujangasana, ArdhaSalabhasana, Ardhalahasana, and Shavasana) for 5 times for 25–30 mins.
- ii. Pranayama (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.

Initially, intensive training on steps of yoga was taught to menopausal women in the study group for 5 consecutive days for 1½ hours per day. After the 5-day 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.

**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 study and control group. P value less than 0.05 was considered as statistically significant.

**RESULTS**

Of 260 participants, there were totally 6 dropouts, 2 in the study group and 4 in the control group due to a) change of houses, b) family functions c) illness etc. The analysis was done for a total of 254 participants (128 in study group and 126 in control group).

The baseline values were not significantly different between 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), parity (p=0.47) and duration of attainment of menopause (p=0.96).

**Table: 1 Distribution of quality of life of menopausal women in study and control group (Quality of life, Item no: 1)**

**N=254**

Group	Quality of life	Pre test		Post test	
		n	%	n	%
Study Group (n=128)	Very poor	56	44	-	-
	Poor	28	22	11	9
	Neither poor nor good	39	30	26	20
	Good	5	4	56	44
	Very Good	-	-	35	27
Control group (n=126)	Very poor	62	49	55	44
	Poor	24	19	32	25
	Neither poor nor good	33	26	27	21
	Good	7	6	12	10
	Very Good	-	-	-	-

The item 1 in the QOL scale showed that, maximum number of menopausal women 56(44%) had very poor quality of life and only 5(4%) of them had good quality of life in the study group. In the control group, most of the menopausal women 62 (49%) experienced very poor quality of life and only 7(6%) of them had good quality of life before the yoga intervention. But after the practice of yoga for 12 weeks, most of the women 56(44%) in study group had good quality of life. (Table 1)

**Table: 2 Distribution of level of satisfaction of health status of menopausal women in study and control group. (Quality of life, Item no: 2)**

**N=254**

Group	Satisfaction regarding health	Pre test		Post test	
		n	%	n	%
Study Group (n=128)	Very dissatisfied	59	46	-	-
	Dissatisfied	33	26	13	10
	Neither satisfied nor dissatisfied	30	23	29	23
	Satisfied	6	5	54	42
	Very satisfied	-	-	32	25
Control group (n=126)	Very dissatisfied	59	47	54	43
	Dissatisfied	38	30	30	24
	Neither satisfied nor dissatisfied	25	20	32	25
	Satisfied	4	3	10	8
	Very satisfied	-	-	-	-

Table 2 represents that, majority of menopausal women were very dissatisfied about their health in the study group (46%) and control group (47%) before the practice of yoga. After 12 weeks of yoga practice, majority 42% of women were satisfied about their health in study group.

The baseline values of physical, psychological, social and environment domains of quality of life were not significantly different between study and control group.

**Table 3: Comparison of post test mean and standard deviation of domain scores of quality of life of menopausal women between study and control group**

Domains	Study group (n=128)		Control group (n=126)		Student independent t-test
	Mean	SD	Mean	SD	
Physical domain	61.46	12.33	41.78	8.45	t=14.82 p=0.001*** df=252
Psychological domain	67.75	19.28	41.20	15.83	t=11.99 p=0.001*** df=252
Social domain	70.57	21.56	41.00	21.03	t=11.06 p=0.001*** df=252
Environment domain	60.26	20.87	37.63	21.04	t=8.61 p=0.001*** df=252

\*\*\* very high significance at  $P \leq 0.001$

The table 3 depicts that, there was extremely high significant difference found for physical domain (t=14.82), psychological domain (t=11.99), social domain (t=11.06) and environment domain (t=8.61) after yoga practice for 12 weeks at p=0.001 level between study group and control group.

**Table 4: Comparison of domain wise mean gain score of quality of life of menopausal women in study and control group**

**N=254**

Group	Domains	Pre test mean	12 <sup>th</sup> week	
			12 <sup>th</sup> week Mean	Mean gain score with 95%CI
Study group (n=128)	Physical	40.84	61.46	20.62(18.1- 23.1)
	Psychological	39.00	67.75	28.75(24.5-32.9)
	Social	39.04	70.57	31.53(26.6-36.4)
	Environment	35.87	60.26	24.39(19.6-29.2)
Control group (n=126)	Physical	41.12	41.78	0.66(-3.4-4.5)
	Psychological	40.11	41.20	1.09(-3.8-5.6)
	Social	39.89	41.00	1.11(-4.2-6.6)
	Environment	36.35	37.63	1.28(-4.0-6.9)

Data projected in table 4 showed that, the quality of life mean gain score of physical domain was 20.62, psychological domain was 28.75, social domain was 31.53 and environment domain was 24.39 with 95% of confidence interval in study group. But, there was not much difference found in the mean gain score of all domains of quality of life of menopausal women in control group with 95% of confidence interval.

## DISCUSSION

Many women find the time around menopause stressful. This may be partially due to hormonal changes and resulting bothersome symptoms such as hot flashes and disrupted sleep. In addition, family and

personal issues such as the demands of teenage children, children leaving home, aging parents, midlife spouses, and career changes often converge on women during these years. Chronic stress is not good for anyone's health. It may cause increased blood pressure and heart rate, headaches, gastric reflux, depression/anxiety, and over the long term, an increased risk for heart disease. Some believe that, chronic stress may affect the immune system, making the people more susceptible to illness, infections, and even cancer. Stress affects not only the health but also relationships, work performance, general sense of well-being, and quality of life.<sup>20</sup>

In this present study, there was extremely high significant difference found in all domains of quality of life at p=0.001 level between study group and control group at 12 weeks. The quality of life of menopausal women was greatly improved with practicing yoga for 12 weeks in physical, psychological, social and environment domains.

These study findings are consistent with the study which was done by Mastrangelo, et al, on Iyengar Yoga for menopausal symptoms. The results showed that, 80% of the participants demonstrated an increase in flexibility. Five participants reported a decrease in menopausal symptoms and an increase in quality of life following the eight week program. Four participants showed improvement on the sit and-reach test.<sup>21</sup>

In study group, the mean difference score was high after 12 weeks in all the domains of quality of life with 95% of confidence interval. This shows that, the intervention was effective in improving their quality of life.

The younger menopausal women between the age of 45-47 years were found to have significant improvement in physical, psychological, social and environment domain score of quality of life. Women who were married had significant improvement in physical and environment domain score of quality of life.

The most important benefit of yoga is physical and mental therapy. The aging process, which is largely an artificial condition, caused mainly by auto-intoxication or self-poisoning, can be slowed down by practicing yoga. To get the maximum benefits of yoga, one has to combine the practices of yogananas, pranayama and meditation. According to medical scientists, yoga therapy is successful because of the balance created in the nervous and endocrine systems which directly influences all the other systems and organs of the body. Yoga acts both as a curative and preventive therapy.<sup>22,23</sup>

## CONCLUSION

Thus, the present study has shown that, the practice of yoga for 12 weeks increased the quality of life of menopausal women. The present study concluded that, yoga is a non pharmacological intervention in improving the menopausal women's quality of life.

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