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To study the vasomotor symptoms in peri-menopausal women following 8 weeks of integrated yoga therapy (IAYT) approach

[1]Dongare Smita Devanand and [2]Dr. Yugal Kishore

[1]Research Scholar, Department of Psychology, Maharaja Agrasen Himalayan Garhwal University, Uttarakhand, India
[2]Professor, Department of Psychology, Maharaja Agrasen Himalayan Garhwal University, Uttarakhand, India

Corresponding Author: Dongare Smita Devanand

Abstract

When a woman's ability to procreate ends, the menopause is a significant event in her life. Some perimenopausal women have mild discomfort, but others have numerous, severe symptoms. A number of symptoms are commonly reported, including psychological issues like mood swings and other changes that might affect social or personal relationships and lower one's general quality of life, as well as physiological issues like hot flashes. Women experience menopause and post menopause for a large portion of their life. There were an estimated 467 million women in this state in 1990, and by 2030, that figure is predicted to rise to 1200 million. The Indian Menopausal Society's research indicates that the number of perimenopausal women will rise significantly in India as well. The majority of Indian women over 45 struggle with perimenopausal disorders and illnesses, wasting their precious years because they are unaware of the changes occurring in their bodies. Therefore, creating strategies and treatment plans to manage perimenopausal symptoms and enhance the quality of life for this sizable population of women becomes crucial. Women experience accelerated physical, psychological, and neuroendocrine aging during the menopause and perimenopause. It has a significant impact on quality of life because it is linked to a number of clinical symptoms. Additionally, it causes a sharp increase in cardiovascular disease (CVD), which is probably due to the concurrent rise in the prevalence of certain hemodynamic and metabolic abnormalities associated with insulin resistance that are highly predictive of CVD. These abnormalities are collectively referred to as metabolic or insulin resistance syndrome.

Keywords: Symptoms, physical, psychological, cardiovascular disease, hemodynamic

1. Introduction

Concern over women's health has been widespread. Changes in women's lives that impact their physical and mental health have become a significant component in study and public health today. The majority of research conducted in India has focused on identifying the menopause's age and symptoms that women encounter at this stage of life.

Menopause is a progressive process that seldom happens all at once. The timing of a woman's menopause cannot be accurately predicted by any test or evaluation method. There is no correlation between the age at which a woman begins menstruating and the age at which the menopause begins. Every woman would experience menopause at a different age. Women often have abnormal vaginal discharge and irregular bleeding prior to the true menopausal era. Hot flashes, nocturnal sweats, dry vagina, painful sex, vaginal itching or irritation, frequent urination, urine leakage, changes in skin texture, worsening acne, and weight gain are some of the symptoms of menopause that are frequently described.

During the menopause phase, cognitive alterations are also commonly observed. According to Stöppler (2015) [1], these also differ from woman to woman and are likely to cause mood swings, exhaustion, irritation, tension, and memory fluctuations.

Other significant and typical menopausal transition symptoms for women include hot flashes, dry vagina, sleep issues, mood swings, changes in sexual desire, and hormonal changes. During the menopausal phase, there may also be some major health issues, such as heart disease, osteoporosis, weight gain, blood pressure fluctuations, or changes in cholesterol levels. The period of a woman's life when her menstrual cycle ends is known as menopause. In actuality, it marks the conclusion of her reproductive cycle. Therefore, a woman will no longer be able to conceive since, according to biological terms, she will stop generating eggs every four weeks.

The World Health Organization (WHO, 1996) states that menopause is defined as "the permanent cessation of menstruation resulting from the loss of follicular activities

of ovaries and when the menstrual cycle stops more than 12 months where there is a drop in two most important hormones in the female body."

There is significant variety in menopause symptoms and age, despite the fact that menopause is a universal phenomenon. Women have psychological, vasomotor, urogenital, psychosomatic, and sexual dysfunctions throughout the menopausal transition.

Women of all ages must take care of themselves since they are really valuable. A mature woman needs to be fit, elegant, and full of "POISE" since she has a bigger responsibility to perform in the family and society. In the absence of a recognized illness, aging is the normal course of structural and functional changes brought on by time. In terms of follicular atresia, the female reproductive system ages as a continuum starting at 20 weeks gestation. It involves the gradual loss of oocytes due to ovulation or atresia, albeit this does not always happen at the same pace. Chronologic age is a poor predictor of the start or finish of the menopausal transition since natural menopause occurs in a relatively large age range (40–58 years).

It is anticipated that there will be 1.1 billion postmenopausal women globally by 2025. In 1998, the average woman's life expectancy was 65 years (compared to 79 years in more industrialized nations). By 2025, this is predicted to increase to 72 years globally (82 years in developed nations).

2. Review of Literature

In the Study of Women's Health Across the Nation (SWAN), Gold *et al*. (2017) [2] conducted a longitudinal examination of changes in waist circumference and weight in relation to incident vasomotor symptoms. There was no VMS at baseline, according to data from 10 follow-up visits for 1,546 participants. They were modeled using discrete survival analyses, controlling for variables, for time to first symptomatic visit in relation to concomitant BMI and waist circumference, as well as change in weight and waist circumference throughout early and late menopause. The findings indicated that a higher waist circumference and concomitant BMI were substantially associated with a decreased risk of VMS in late menopause and a higher and more frequent (≥6 d in the previous 2 weeks) incident VMS in early menopause. Therefore, it can be said that waist circumference and concurrent BMI were inversely correlated with incident VMS in late menopause and positively correlated with it in early menopause. VMS may be avoided by maintaining a healthy weight in the early stages of menopause.

Ahuja *et al*. (2016) [3] carried out a PAN India Survey on the age of menopause and factors influencing menopausal age in 21 chapters of the Indian Menopause Society that included the east, west, north, and south areas. Out of the 2184 interviews that were done, 2108 fully completed questionnaires were used in the research. Postmenopausal women made up 1707 of the 2108 entries, whereas perimenopausal women made up 401. While 292 women underwent surgical menopause following a hysterectomy, about 1415 women experienced natural menopause. All of the women's height, weight, and waist circumference were recorded, and their body mass index (BMI) was determined. Indian women's natural menopause age was found to be 46.2 ± 4.9 years. The duration of marriage, menopausal age, and menopausal symptoms all showed a significant positive connection (p<0.001). Married women's menopausal age was 46.1±4.9, widowed women's was 47.9±4.8, and unmarried women's was 45±6.3. There has been a pattern of women's waistlines getting wider as they become older.

3. Objectives of the study

1. Research of improvements in vasomotor symptoms in peri-menopausal women following 8 weeks of Integrated Yoga Therapy (IAYT) approach
2. After 8 weeks of Integrated Yoga Therapy, to evaluate the cognitive (specifically memory and attention span) functions.

4. Research Methodology

This cohort study included 500 Indian women between 45-55 years of age who met the inclusion criteria. Also included were women who had undergone hysterectomy with preserved ovaries. The research omitted women unfamiliar with spoken English, with minimum Graduate in education, women undergoing hormone replacement therapy (HRT), gynecological disorders such as endometriosis, fibroids, ovarian cysts, prolapsed uterus, etc., or other medical conditions (such as hypertension, diabetes mellitus, hypo / hyperthyroidism) and those undergoing psychiatric medication. The thesis was conducted at the University of Yoga, Swami Vivekananda Yoga Research Foundation (SVYASA), Pune, India. The institutional oversight board and the university's ethical committee received formal approval for the report. The knowledge was gathered from different locations (banks, school and college employees, women's clubs and outpatient gynecology clinics). The women who met the requirements for inclusion were enrolled and informed consent was obtained. The respondents were asked to complete the Menopause Rating Scale and the Greene Climacteric Scale and were told that their answers would be kept confidential. With the assistance of a trained statistician, the gathered data was examined using statistical software, SPSS Version 15, at a 5% level of statistical significance. To ascertain the differences in the two groups following the twelve weeks, the individual variables were assessed. To determine the relationship between all the variables at the base level of the participants in both groups, the baseline values for each variable in both groups were compared using the independent paired t-test and the Chi-square test. The pre and after data were compared using repeated measure ANOVA.The findings indicate that the integrated approach to yoga therapy (IAYT) in peri-menopausal women may be one of the favored non-hormonal, life-style changing regimes. With its practitioners mushrooming across the globe, Yoga has been spreading worldwide. In the globally acclaimed novels, medical journals, therapy-oriented magazines, it has made its entrance. In women with positive outcomes, complementary and holistic treatments have been the favored treatment modality after hormone replacement has been shown to be dangerous for the treatment of peri-menopausal symptoms. Yoga is considered to be one of the most relevant, cost-effective, complementary and alternative therapies without any side effects (if carefully practiced) and provides much more than mere healing. In order to deal with the psychological and somatic symptoms of environment, the practice of yoga has a philosophical foundation and effective techniques.

5. Results and Data Interpretation

Table 1: Characteristics of the women and base line comparison between yoga and the control group

Characteristics	Yoga(n=250)	Control(n=250)	p-value
Age[a] in years	48.34±4.63	48.30±5.11	0.04(NS)
Age distribution[b] in years			
40-45	74(29.7%)	84(33.3%)	
46-50	97 (38.7%)	71(28.6%)	0.36(NS)
51-55	45(18.0%)	52(21.0%)	
56-58	34(13.5%)	43(17.1%)	
Anthropometric measures[a]			
Height(meters)	1.41±0.10	1.40±0.01	0.10(NS)
Weight (Kg)	60.26±9.84	58.37±9.04	0.03(NS)
BMI(Kg/m^2)	26.05±5.07	26.03±5.42	0.86(NS)
Waist(inches)	34.55±3.85	34.30±3.24	0.50(NS)
Hip(inches)	36.40±2.85	35.64±2.72	0.05(NS)
BMI distribution[b]			
Below normal(<18.4)	14(5.4%)	10(3.8%)	
Normal(18.5 – 24.99)	99 (39.6%)	100 (40.0%)	
Overweight (25.0 – 29.99)	92 (36.9%)	95 (38.1%)	0.50 (NS)
Obese(> 30)	45 (18.0%)	45 (18.1%)	
Characteristics	Yoga(n=250)	Control(n=250)	P value
Marital status[b]			
Married	246(98.2%)	234(93.3%)	
Divorced	2 (0.9%)	0(0%)	0.03(S)
Separated	2(0.9%)	16 (6.7%)	
Children[b]			
None	14(5.4%)	15(5.7%)	
One	42(17.1%)	38(15.2%)	
Two	158 (63.1%)	128 (51.4%)	0.07(NS)
More than two	36 (14.4%)	69 (27.6%)	
Family[b]			
Nuclear	187(74.8%)	167(66.7%)	
Joint	58(23.4%)	62(24.8%)	0.04(NS)
Extended	5(1.8%)	21(8.6%)	
Type of Menses[b]			
Regular	81(32.4%)	74(29.5%)	
Irregular	54(21.6%)	62(24.8%)	0.70(NS)
Nomen struation	115 (46%)	114 (45.7%)	
Food[b]			
Non-vegetarian	147(58.6%)	134(53.5%)	
Vegetarian	103(41.4%)	116(46.7%)	0.37(NS)
Education[b]			
Postgraduate/graduate	97(38.7%)	72(28.6%)	
Intermediate/Highschool	115 (45.9%)	126 (50.5%)	0.13(NS)
Middle School/ Preschool	38 (15.3%)	52 (21.0%)	
Employment[b]			
Professional/Semi Professional	66 (26.1%)	98 (39.0%)	
Clerical/skilled worker	22 (9.0%)	19 (7.6%)	
Semi skilled/Unskilled worker	2 (0.9%)	7 (2.9%)	0.13 (NS)
Unemployed or house duties	160 (64.0%)	126 (50.5%)	

Characteristics	Yoga(n=250)	Control(n=250)	p-value
Socio economic class[b]			
Upper class	68(27.0%)	34(13.3%)	
Middleclass	151(60.4%)	142 (57.1%)	0.001(S)
Lower class	31 (12.6%)	73 (29.5%)	
SBP[a](mm/Hg)	126.26± 11.02	128.34± 11.87	0.08(NS)
DBP[a](mm/Hg)	83.73± 7.4	85.52± 10.07	0.55(NS)

In the yoga group, the average age of the ladies was 48.22 ±4.52, while in the control group, it was 48.20 ±5.00. The groups' ages were statistically similar (p=0.15). Women in the 46–55 age range made up the largest group. There was no significant difference (p>0.05) in the group's baseline anthropometric measurements of height, weight, waist circumference, and hip circumference. Over 50% of women were fat or overweight. Regarding marital status, number of children, and family structure, no discernible differences were found between the groups. There were no notable

differences in the two groups' menstrual histories. Additionally, both groups' systolic and diastolic blood pressures were similar. With the exception of socioeconomic class, both groups' levels of education and employment were comparable. More than 55% of women belonged to the middle class and were comparable across groupings, while there were notable differences between the upper and lower economic class groups.

Hormones

Thyroid stimulating hormone (TSH)

TSH levels were up but not substantially (p=0.81) in the yoga group, with an effect size of 0.17, and decreased but not significantly [p=0.14] in the control group, with an effect size of 0.57. The groups did not significantly differ from one another [p=0.73].

Table 2: The pre and post mean values of TSH in both the groups

TSH(UIU/ml)	Yoga (n=250)	Control (n=250)	p-value
Pre	4.03±4.42	4.01±9.17	0.62[b]
Post	4.10±6.76	3.44±5.80	
P Value	0.70[a]	0.03[a]	
Effect size	- 0.06	0.46	

[a]No significant change with in the groups;
[b]no significant difference between the groups.

Cortisol

Following the yoga therapy intervention, there was no discernible change in the cortisol levels, which were considerably elevated in the physical exercise group (p<0.04). The groups did not significantly vary from one another (p=0.17).

Table 3: The pre and postmean values of cortisol on both the groups

Cortisol(µg/dl)	Yoga (n=250)	Control (n=250)	p-value
Pre	14.05±5.51	12.75±5.25	0.02*
Post	14.35±5.62	13.82±5.20	
P Value	0.46[a]	0.06[b]	
Effect size	- 0.20	- 1.06	

*Significant increase within the group;
[a]no significant change within the group;
[b]no significant difference between the groups.

6. Conclusion

Women have accelerated physical, physiological, and neuroendocrine aging at the menopause. Menopausal women's quality of life is impacted by the series of negative changes that arise in reaction to the changing hormonal and metabolic environment. These changes cause a number of physical and psychological ailments. Furthermore, perimenopause significantly increases the risk of cardiovascular disease, most likely as a result of the concomitant development in insulin resistance and associated atherogenic alterations that collectively make up the metabolic or insulin resistance syndrome. The pathophysiology and development of cardiovascular disease are closely linked to a group of metabolic and hemodynamic disorders. In order to assist many women in this stage in maintaining a healthy and preventive lifestyle, both of these concerns must be addressed and safe and affordable therapeutic approaches must be created. A woman's menopause is a significant life event that is linked to a number of physical and mental changes. The majority of women are now anticipated to live for more than one-third of their lives beyond menopause, since the average lifespan for women has climbed to 80 years. Therefore, it is crucial to consider the demographic, economical, and ethical implications of this sizable senior population. Furthermore, it becomes crucial and necessary to provide this age group with suitable health care. Controlling menopausal symptoms is the first crucial aspect of effective health care management of menopause. The second is the prevention and treatment of conditions like osteoporosis, metabolic syndrome, cardiovascular disease, neurodegenerative diseases, and cancer that become more common after menopause. These problems must be resolved, and plans must be created to support these women in preserving a productive and healthy standard of living. We investigated the function of yoga therapy in the treatment of these two significant menopausal areas in the current study.

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