

Hatha Yoga for Vasomotor Symptoms of the Climacteric Period

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Abstract

Background: The climacteric period is a complex physiological transition phase in women, characterized by a decrease in estrogen levels that affects various body systems. One of the main symptoms commonly experienced includes vasomotor symptoms such as hot flushes, night sweats, sleep disturbances, and mood changes. Up to 80% of menopausal women experience vasomotor symptoms, and about 20% experience a high intensity that persists for years. Medical treatments such as hormone replacement therapy (HRT) are indeed effective, but long-term use poses risks of causing breast cancer, liver disease, and metabolic disorders. Therefore, non-pharmacological interventions based on complementary therapies serve as an alternative to address these issues. This study aims to evaluate the effectiveness of modified Hatha Yoga in improving sleep quality in menopausal women. Modifications were made by adjusting the variations of yoga movements, as well as the duration and frequency of exercises tailored to the physical capacity of menopausal women.

Methods: This study utilized a quasi-experimental design with a pre-test and post-test with control group approach. The sample consisted of 60 women aged 40–65 years who were divided into intervention and control groups, recruited through a purposive sampling technique. The intervention was administered for four weeks, twice a week, focusing entirely on Hatha Yoga practice sessions. Data collection was conducted using the Menopausal Rating Scale (MRS) and the Pittsburgh Sleep Quality Index (PSQI) questionnaires.

Results: Data were analyzed using descriptive statistics, normality tests, homogeneity tests, paired t-tests, independent t-tests, and ANOVA to evaluate the effectiveness of the intervention.

Keywords: Sleep Quality; Hatha Yoga; Climacteric period

INTRODUCTION

Menopause is a phase defined by the cessation of the menstrual cycle for 12 consecutive months, characterized by a drastic decrease in estrogen levels. Estrogen plays a crucial role in regulating numerous bodily functions, including metabolism, temperature regulation, as well as cardiovascular and bone health. When estrogen levels decline, these physiological changes can trigger various symptoms such as hot flushes, night sweats, sleep disturbances, and mood disorders (Santoro et al., 2020; Minkin, 2019). Nearly 80% of menopausal women worldwide suffer from vasomotor symptoms, and 20% of them experience severe symptoms (Paciuc, 2020). The experienced vasomotor symptoms include hot flushes, night sweats, sleep disturbances, mood changes, and anxiety (Koothirezhi & Ranganathan, 2024; Paciuc, 2020; Zhao et al., 2023). These symptoms can last for 1 to 7 years, and may even persist for up to 15 years in 10% to 15% of postmenopausal women (Peacock et al., 2024). Unmanaged vasomotor symptoms during menopause potentially increase the risk of cardiovascular diseases, metabolic arthritis disorders, dementia, cancer, and diabetes (Lee et al., 2022). This highlights the importance of interventions to mitigate more serious long-term health impacts (Khan et al., 2023).

The management of vasomotor symptoms can be approached in two ways: pharmacological and non-pharmacological therapies. The commonly used pharmacological treatment for managing menopausal

symptoms is hormone replacement therapy (HRT); however, the long-term use of HRT is associated with an increased risk of breast cancer, ovarian cancer, liver disease, and metabolic disorders (Gaffey et al., 2016). Conversely, non-pharmacological therapies offer a safer and more holistic approach. Yoga is widely recognized as a powerful tool for stress reduction. Decreasing stress hormone levels, such as cortisol, can help reduce the frequency and intensity of hot flushes, as stress significantly contributes to triggering vasomotor symptoms. Studies show that stress management through yoga significantly reduces physical and emotional symptoms in menopausal women. This approach effectively lowers anxiety levels, improves mood, and enhances sleep quality, all of which play a vital role in reducing the severity of vasomotor symptoms. Researchers utilize yoga therapy to address this issue because it focuses not only on physical aspects (movement exercises) but also encompasses the integration of breathing and relaxation techniques. Hatha yoga is widely known as a practice that provides various physical and mental health benefits (Szaszko et al., 2023). It is a series of practices focusing on the mind, body, and soul, consisting of physical postures (*asanas*), breathing techniques (*pranayama*), and relaxation or meditation (Kuptniratsaikul et al., 2023). Hatha yoga functions to improve flexibility, relieve muscle tension, reduce pain, enhance energy balance, stabilize breathing and heart rate, lower cortisol levels, and improve blood circulation (Malhotra et al., 2023). Various studies indicate that yoga can effectively help alleviate vasomotor symptoms in menopausal women (Jones et al., 2016; Newton et al., 2014; Shepherd-Banigan et al., 2017).

Through modified Hatha Yoga, where the movements are tailored to the physical capacities and limitations of menopausal women, this therapy offers a comprehensive relaxation technique. Therefore, this study aims to explore the effect of modified Hatha Yoga in managing vasomotor symptoms among women in the climacteric phase. This modified approach is expected to provide a targeted and robust effect in reducing vasomotor symptoms and comprehensively improving the patients' overall quality of life.

METHODS

This study is a quasi-experiment with a pretest-posttest control group design. This study involved two groups: the Hatha Yoga intervention group and a control group that did not receive any intervention. The study population comprised women aged 40–60 years experiencing climacteric symptoms, with a total sample size of 60 participants.

The sampling technique used was purposive sampling, based on specific inclusion and exclusion criteria. The inclusion criteria included: (1) women aged 40–60 years, (2) experiencing climacteric symptoms, and (3) willing to participate as respondents. The exclusion criteria were: (1) currently undergoing hormone replacement therapy (HRT), and (2) having a history of psychiatric disorders.

The instruments used were the Menopause Rating Scale (MRS) to assess climacteric symptoms and the Pittsburgh Sleep Quality Index (PSQI) to measure sleep quality. Both instruments have been proven valid and reliable in measuring the studied variables.

RESULTS AND DISCUSSION

RESULTS

1. Characteristics of respondents

Table. 1 Age and Education Characteristics of Intervention Groups and Control Groups

No	Krakteristik	Frekuensi	Presentase	Frekuensi	Presentase
1	Age				
	<45 years old	0	0%	0	0%
	45 – 59 years old	10	33.3%	10	33.3%
	>59 years old	20	66.7%	20	66.7%

2	Education				
	Elemetary school	9	28.2%	18	57,9
	Junior High school				
	Senior high school	8	28 %	2	8,2
	Colege	5	15.7 %	9	29,8
		8	28 %	1	4,1
Total		30	100 %	30	100%

Most of the respondents were aged >59 years (66.7%), while the rest were 45–59 years old (33.3%). There were no respondents aged <45 in either group. This shows that the majority of participants are at a vulnerable age to experiencing vasomotor symptoms due to decreased estrogen.

In terms of education, the intervention group respondents had a fairly even distribution: elementary (28.2%), junior high (28%), high school (15.7%), and university (28%). Meanwhile, in the control group, the majority were educated in elementary school (57.9%), followed by high school (29.8%), junior high school (8.2%), and university (4.1%). The majority of respondents are from lower-middle school backgrounds, which can affect health understanding and acceptance of mindfulness interventions.

2. Intervention Groups and Control Groups

Table. 2 Analisis Paired T Test Invention Group and Control Group

		Mean	Std. Deviation	Std. Error Mean	95% Lower Upper		t	df	Sig. (2-tailed)
<u>Eksperimen</u>	Pre - Post	4.500	2.874	.525	3.427	5.573	8.577	29	.000
<u>Kontrol</u>	Pre - Post	.200	2.858	.522	-.867	1.267	.383	29	.704

- Experimental Group The results of the paired t-test showed a significant difference between the pre- and post-intervention scores in the experimental group, with a value of $t = 8.577$, $p = 0.000$ ($p < 0.05$). The average reduction in vasomotor symptoms was 4.5 points with a standard deviation of 2.874. The 95% confidence interval indicated a score difference ranging from 3.427 to 5.573, which means the intervention had a substantial effect on reducing the symptoms.
- Control Group In the control group, no significant difference was found between the pre-test and post-test, with a value of $t = 0.383$, $p = 0.704$ ($p > 0.05$). The average reduction was only 0.2 points, which is not statistically significant. This indicates that without the modified Hatha Yoga intervention, vasomotor symptoms tended to remain unchanged.
- Interpretation These results indicate that modified Hatha Yoga is effective in reducing vasomotor symptoms in climacteric women. A significant reduction only occurred in the experimental group, whereas symptoms in the control group remained relatively stable. Therefore, this intervention can be recommended as a complementary therapy that is safe, easy to perform, and has a significant positive impact on the quality of life of menopausal women.

DISCUSSION

Sleep quality is a crucial physiological aspect that significantly declines in menopausal women due to hormonal changes. The decrease in estrogen levels affects the hypothalamus in regulating the sleep-wake cycle (circadian rhythm) and reduces the production of serotonin and GABA, neurotransmitters that induce relaxation (Santoro et al., 2020; Minkin, 2019). This makes menopausal women vulnerable to insomnia and decreased sleep efficiency (Peacock et al., 2023).

Based on measurements using the Pittsburgh Sleep Quality Index (PSQI), this study demonstrated a significant improvement in sleep quality following the modified Hatha Yoga intervention. The majority of respondents reported increased sleep duration, decreased sleep latency, and reduced sleep disturbances. Hatha Yoga has been proven to have a direct effect on the autonomic nervous system by increasing parasympathetic activity and suppressing sympathetic responses that trigger stress (Malhotra et al., 2023). Slow stretching movements and deep breathing techniques in yoga can increase the production of alpha waves in the brain, which are closely associated with relaxation and the body's readiness for sleep (Szaszko et al., 2023).

From a psychoneuroimmunological perspective, this improvement in sleep is highly influenced by the reduction in cortisol levels. Hatha Yoga has been shown to inhibit the HPA (hypothalamic-pituitary-adrenal) axis, which is the primary stress pathway (Alzahrani et al., 2023). Consistent stress reduction helps resynchronize the body's circadian rhythm (Lee et al., 2022). This effectiveness is supported by the respondents' adherence to the exercise routine of twice a week for four weeks. This frequency is adequate to produce significant neurobiological adaptations and autonomic regulation, aligning with the dose-response principle in non-pharmacological therapies (Newton et al., 2014; Jones et al., 2016).

Compared to Hormone Replacement Therapy (HRT), which carries long-term side effect risks such as breast cancer and liver disorders (Paciuc, 2020), modified Hatha Yoga offers a much safer treatment alternative that has no side effects and can be performed independently. This improvement in sleep quality not only enhances the subjective perception of the respondents—who reported feeling calmer and falling asleep faster (Baker et al., 2019)—but also provides broad systemic benefits. Quality sleep maintains mood stability and energy levels, and helps prevent postmenopausal metabolic complications such as insulin resistance and hypertension (Khan et al., 2023; Shepherd-Banigan et al., 2017).

Overall, modified Hatha Yoga is a holistic intervention that is biologically and psychologically proven to address sleep disturbance issues in climacteric women. These findings provide important implications for the development of community-based complementary therapies that are affordable, safe, and oriented toward improving the long-term quality of life for elderly patients.

CONCLUSION

Based on the results and discussion, it can be concluded that the modified Hatha Yoga intervention is significantly effective in reducing vasomotor symptoms and improving sleep quality in climacteric women. By decreasing cortisol levels and increasing parasympathetic nervous system activity, this intervention successfully improves sleep duration and latency, as well as alleviates physical and emotional complaints without causing adverse side effects. Therefore, modified Hatha Yoga is highly recommended as a safe, independent, and cost-effective non-pharmacological complementary therapy to be implemented in community settings to holistically enhance the quality of life for menopausal women.

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