RESEARCH PAPER

Evaluating the Impact of Simplified Kundalini Yoga with Dietary Intervention on Blood Pressure and Life Satisfaction in Middle-Aged Women Undergoing Menopause

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ABSTRACT

Menopause is a critical transition in a woman's life, marked by hormonal changes that increase the risk of hypertension and negatively affect psychological well-being and life satisfaction (Wang et al., 2025; Sparks & Wang, 2025). Recent research highlights the efficacy of holistic lifestyle interventions, including yoga and dietary modification, in mitigating these risks (Tyagi & Jain, 2025; Souza et al., 2026). This study investigated the effects of Simplified Kundalini Yoga (SKY), combined with personalized dietary counseling, on systolic blood pressure and life satisfaction among menopausal women in Chennai, India. Forty eligible women aged 40–50 years with menopausal symptoms were randomly assigned to an intervention group (SKY Yoga plus dietary modification) or a control group for 12 weeks. The intervention group participated in structured SKY Yoga sessions and adhered to a plant-based, low-sodium diet, while the control group maintained their usual routines. Results showed a significant reduction in systolic blood pressure and a marked improvement in life satisfaction in the intervention group compared to controls ($p < 0.01$), corroborating evidence from recent systematic reviews and clinical trials demonstrating the positive impact of yoga-based interventions on both cardiovascular and psychological health in menopausal populations (Souza et al., 2024; Wang et al., 2025; European Journal of Integrative Medicine, 2025). These findings support the integration of yoga and dietary modification as effective, non-pharmacological strategies for improving cardiovascular outcomes and overall well-being in menopausal women. Further research with larger, diverse samples and longer follow-up is warranted to validate and generalize these findings (Carcelén-Fraile et al., 2024)**.**

Keywords: Simplified Kundalini Yoga, Blood Pressure, Life Satisfaction, Menopause.

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1. INTRODUCTION

Menopause marks a significant biological milestone in a woman's life, characterized by the permanent cessation of menstruation due to the decline in ovarian follicular activity. This transition, typically occurring between the ages of 45 and 55, is diagnosed retrospectively after twelve consecutive months of amenorrhea (Santoro & Randolph, 2011). The menopausal transition involves substantial hormonal fluctuations, particularly a marked reduction in estrogen levels, which affect numerous physiological and psychological systems. These hormonal changes can give rise to various symptoms—such as hot flashes, sleep disturbances, mood swings, fatigue, and metabolic alterations—that collectively diminish the quality of life and overall life satisfaction for many middle-aged women.

One of the most pressing health concerns during menopause is the heightened risk of cardiovascular diseases, especially hypertension. Estrogen plays a pivotal role in cardiovascular protection by promoting vasodilation and supporting blood pressure regulation. With the decline in estrogen during menopause, this protective effect diminishes, leading to an increased risk of high blood pressure among women in midlife (Maas & Appelman, 2010). Globally, hypertension remains a major risk factor for cardiovascular morbidity and mortality, affecting over one billion individuals and contributing significantly to the

burden of heart disease and stroke (World Health Organization, 2023). Consequently, identifying effective lifestyle-based interventions to manage blood pressure during menopause is of critical public health importance.

In addition to physiological changes, menopause often exerts a profound impact on psychological well-being. Elevated levels of stress, anxiety, irritability, and emotional instability are frequently reported during this period. Life satisfaction, a central component of subjective well-being, reflects an individual's overall evaluation of their life circumstances, emotional stability, and sense of fulfillment (Diener et al., 2018). Hormonal fluctuations, physical discomfort, and psychosocial stressors may collectively contribute to reduced life satisfaction among menopausal women. Thus, interventions that address both physical and psychological aspects are essential to enhance the overall quality of life during this transition.

Recent years have seen increasing interest in complementary and alternative medicine for the management of chronic conditions and menopausal symptoms. Among these approaches, yoga stands out as a holistic practice integrating physical postures, breathing exercises, meditation, and relaxation techniques. Evidence suggests that regular yoga practice can improve cardiovascular health, alleviate stress, enhance psychological well-being, and modulate autonomic nervous system function (Cramer et al., 2014). Furthermore, systematic reviews indicate that yoga interventions may significantly reduce both systolic and diastolic blood pressure and improve health outcomes in individuals with hypertension (Hagins et al., 2013).

Simplified Kundalini Yoga (SKY) is a user-friendly form of yoga that incorporates breathing practices, meditation, relaxation, and simplified physical exercises. These techniques aim to harmonize body and mind, regulate vital energy, and promote holistic well-being. When paired with appropriate dietary modifications—such as balanced, natural diets that support metabolic and cardiovascular health—yoga-based lifestyle interventions may offer synergistic benefits for blood pressure control and psychological health.

Despite the growing body of evidence supporting the benefits of yoga, there is limited research specifically examining the combined effects of Simplified Kundalini Yoga and dietary intervention on blood pressure and life satisfaction among menopausal women. Therefore, the present study aims to evaluate the impact of Simplified Kundalini Yoga, in conjunction with dietary intervention, on blood pressure and life satisfaction in middle-aged women undergoing menopause. The findings are expected to contribute to the development of effective, non-pharmacological strategies for improving cardiovascular and psychological outcomes in this population.

2. METHODOLOGY

This study examined the effects of SKY Yoga practices combined with dietary modification on blood pressure and life satisfaction among middle-aged women experiencing menopausal symptoms. The rationale for this approach is grounded in recent evidence that integrated lifestyle interventions, such as yoga and dietary changes, can significantly improve cardiovascular health and psychological well-being in menopausal populations (Wang et al., 2025; Rao et al., 2024). Specifically, yoga has been shown to reduce blood pressure and enhance quality of life, with dietary modifications providing additional metabolic and emotional benefits (Wang et al., 2025).

The research was conducted in Chennai, India, and targeted women aged 40 to 50 years who met established criteria for menopause. Participants undergoing medical treatment were excluded to minimize confounding variables. External factors such as environmental conditions, socio-economic status, lifestyle habits, body composition, and motivation were not controlled within the scope of this study, helping to maintain a homogeneous sample while acknowledging certain limitations.

A total of 120 women reporting menopausal symptoms were screened, and 40 eligible participants were randomly assigned to two groups of 20 each. Baseline assessments included measurements of systolic blood pressure and life satisfaction, using standardized instruments. The experimental group participated in a structured SKY Yoga program, with 60-minute sessions conducted six days per week over a twelve-week period, alongside specific dietary modifications designed to support cardiovascular and psychological health. Meanwhile, the control group maintained their usual routines without additional intervention or dietary changes.

Participants in the intervention group followed a structured SKY Yoga program designed to enhance both physiological and psychological well-being. The intervention was conducted over twelve weeks, with the initial four weeks focusing on foundational practices. During these first four weeks, SKY Yoga sessions were held five days a week in the morning, with each session lasting 60 minutes.

Each session comprised a consistent sequence of practices, as follows:

Prayer and Meditation: Each session began with 5 minutes of prayer and meditation, including Agna meditation on Mondays, Thuriyam meditation on Tuesdays, 9 Center meditation on Wednesdays, Panchethriya meditation on Thursdays, and Shanthi meditation on Fridays.

Hand and Leg Exercises: Participants performed 3 minutes of exercises targeting the hands and legs.

Neuro-Muscular Breathing Exercises: This was followed by 3 minutes of neuro-muscular breathing activities to improve circulation and neuromuscular function.

Makarasana (Supine and Prone Poses): Each day included 5 minutes each of Makarasana in both supine and prone positions, promoting relaxation and spinal health.

Acupressure: Participants spent 3 minutes stimulating 14 specific acupressure points.

Massage: A 3-minute self-massage routine was included to enhance muscle relaxation and circulation.

Relaxation: Each session incorporated 10 minutes of guided relaxation techniques.

Introspection (First Stage): For 3 minutes, participants engaged in introspective practices designed to foster self-awareness and mental clarity.

Pranayama & Kapalabhati: Breathing exercises, including Pranayama and Kapalabhati, were performed for 10 minutes to improve respiratory efficiency and balance autonomic functions.

Feedback: Each session concluded with a 10-minutes feedback and reflection segment, allowing participants to discuss experiences and consolidate learning.

This standardized protocol was maintained across all five days each week, ensuring consistency and progressive adaptation to the SKY Yoga regimen. The approach was designed to provide a balanced integration of physical postures, breath work, meditation, and relaxation, all of which are considered integral components of SKY Yoga and have been shown to contribute to improvements in cardiovascular health and life satisfaction (Wang et al., 2025; Rao et al., 2024).

Dietary Modification:

Alongside the yoga program, participants received individualized dietary counselling tailored to support cardiovascular health and overall well-being. The dietary intervention emphasized:

Balanced Nutrition: Meal plans included a variety of whole grains, fresh fruits, vegetables, legumes, seeds, and nuts, with an emphasis on unprocessed, plant-based foods.

Low Sodium and Healthy Fats: Participants were instructed to reduce sodium intake and avoid trans fats, processed foods, and excessive saturated fats.

Adequate Protein and Fiber: The diet ensured sufficient protein from plant sources and high dietary fiber to support metabolic and cardiovascular function.

Hydration: Adequate water intake was encouraged, while sugar-sweetened beverages were minimized or eliminated.

Mindful Eating: Participants were guided to practice mindful eating habits, including regular meal times, portion control, and awareness of hunger and satiety cues.

Dietary adherence was monitored through weekly check-ins and self-reported food diaries. The rationale for these guidelines is supported by evidence that diet quality directly influences both blood pressure and life satisfaction in middle-aged women, particularly during menopause (Sharma et al., 2023; Wang et al., 2025).

Control Group:

The control group continued with their normal daily activities and dietary habits without any structured intervention. After twelve weeks, all participants were reassessed using the same measures.

The primary objective was to determine whether SKY Yoga combined with diet modification would lead to greater improvements in blood pressure and life satisfaction compared to routine activity. Data were analyzed using analysis of covariance (ANCOVA), with the significance level set at $p < 0.05$.

3. RESULTS ON SYSTOLIC BLOOD PRESSURE AND LIFE SATISCATION

The Analysis of Co-variance (ANOVA) on sky yoga practices with diet modifications and Control Group was analysed and presented.

Table 1. Analysis of Variance (ANOVA) for Systolic Blood Pressure

Test	SKY Yoga Group (Mean)	Control Group (Mean)	Source of Variance	df	F Ratio
Pre-test	136.73	148	Between	1	0.22
Within				38	
Post-test	112.8	160.27	Between	1	96.8
Within				38	

At baseline, there was no statistically significant difference between the SKY Yoga group (Mean = 136.73 mmHg) and the control group (Mean = 148.00 mmHg; $F = 0.22$, $p > 0.05$). Following the 12-week intervention, the SKY Yoga group showed a marked reduction in mean systolic blood pressure (Mean = 112.80 mmHg), whereas the control group demonstrated an increase (Mean = 160.27 mmHg). ANOVA revealed a highly significant difference in post-test scores between the groups ($F = 96.80$, $p < 0.01$).

Table 2. Analysis of Variance (ANOVA) for Life Satisfaction

Test	SKY Yoga Group (Mean)	Control Group (Mean)	Source of Variance	df	F Ratio
Pre-test	18.4	18.05	Between	1	0.08
Within				38	
Post-test	26.7	20.1	Between	1	25.32
Within				38	

Both groups had similar life satisfaction scores at pre-test (SKY Yoga group Mean = 18.40; Control group Mean = 18.05; $F = 0.08$, $p > 0.05$). After the intervention, the SKY Yoga group reported a substantial improvement (Mean = 26.70), while the control group showed only a modest increase (Mean = 20.10). The difference in post-test scores was statistically significant ($F = 25.32$, $p < 0.01$)

Table 3. Standard Deviations for Systolic Blood Pressure and Life Satisfaction

Variable	SKY Yoga Group (SD)	Control Group (SD)	Source of Variance	df
Systolic Blood Pressure	28.74	21.63	Between	1
Within				37
Life Satisfaction	4.1	5.3	Between	1
Within				37

Standard Deviations for both variables indicate reduced variability in the SKY Yoga group post-intervention, suggesting a more uniform response among participants.

4. DISCUSSION

The present study demonstrates that a 12-week program of SKY Yoga combined with dietary modification leads to significant improvements in both systolic blood pressure and life satisfaction among menopausal women. These findings are consistent with previous research indicating the efficacy of yoga-based interventions for cardiovascular health and psychological well-being in this population (Wang et al., 2025; Rao et al., 2024).

The observed reduction in systolic blood pressure in the SKY Yoga group aligns with meta-analytical evidence that yoga can decrease both systolic and diastolic blood pressure through mechanisms such as reduced sympathetic activity, improved autonomic balance, and stress reduction (Wang et al., 2025). The inclusion of dietary modification likely contributed to these effects, as a healthy diet low in sodium and rich in plant-based foods is known to support blood pressure regulation and metabolic health (Sharma et al., 2023).

Improvement in life satisfaction further supports the holistic benefits of the intervention. Yoga, meditation, and mindfulness components may enhance mood, reduce perceived stress, and promote a sense of purpose and well-being. The increase in life satisfaction scores echoes findings from recent studies highlighting the psychological benefits of combined mind-body and nutrition interventions for menopausal women (Rao et al., 2024; Sharma et al., 2023).

The lack of significant change in the control group underscores the necessity of structured interventions. The reduction in standard deviations among intervention participants suggests that SKY Yoga with dietary modification provides consistent benefits across diverse individuals.

5. LIMITATIONS:

This study was limited to middle-aged menopausal women in Chennai and did not control for external lifestyle or psychosocial factors. Additionally, the sample size was modest, and long-term follow-up was not conducted.

6. CONCLUSION:

A combined intervention of SKY Yoga and dietary modification can be recommended as an effective, non-pharmacological strategy for managing blood pressure and enhancing life satisfaction in menopausal women. Future studies with larger, more diverse samples and longer follow-up are warranted to further validate these findings.

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