

Effects of a Structured Yogic Training Programme on Selected Physiological Health Indicators among Middle-Aged Women**Dr.C.Malathy¹, Dr.M.Karuppaiah² & K. Jagathis Babu³**

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Abstract

The purpose of the study was to investigate the influence of yogic practices on selected physiological variables among middle-aged women. To achieve the purpose of the study, thirty middle-aged women from Thanjavur District, Tamil Nadu, were selected at random as subjects. The age of the subjects ranged from 30 to 45 years. The selected subjects were divided into two equal groups, consisting of fifteen subjects each. Group I served as the Experimental Group and participated in a structured programme of yogic practices for a period of six weeks, whereas Group II served as the Control Group and did not participate in the experimental training programme. Pre-test measurements were taken before the commencement of the intervention and post-test measurements were obtained after the completion of six weeks of training. Systolic blood pressure and diastolic blood pressure were selected as the physiological variables. The pre-test and post-test differences within the groups were analysed using the paired *t*-ratio. The level of significance was fixed at 0.05 with 14 degrees of freedom. The findings indicated that the experimental group showed significant improvements in systolic and diastolic blood pressure following six weeks of yogic practices, whereas the control group did not show significant changes. The findings suggest that regular yogic practices may contribute to favourable changes in selected cardiovascular physiological variables among middle-aged women.

Key Words: Yogic Practices, Systolic Blood Pressure, Diastolic Blood Pressure, Middle-Aged Women, Physiological Variables.

INTRODUCTION

Yoga is an ancient mind-body discipline originating in India that incorporates physical postures (*asana*), breathing practices (*pranayama*), relaxation and meditation. The practice is traditionally intended to promote harmony between the body and mind. In contemporary health and exercise research, yoga has received considerable attention because of its potential influence on physical, physiological and psychological well-being. Regular physical activity plays an important role in maintaining cardiovascular health. Blood pressure is one of the important physiological indicators of cardiovascular function. Systolic blood pressure represents the pressure exerted by circulating blood against the arterial walls during cardiac contraction, whereas diastolic blood pressure represents arterial pressure during cardiac relaxation. Maintaining healthy blood-pressure levels is important because elevated blood pressure is associated with increased cardiovascular risk. Yogic practices combine

controlled physical movements, stretching, breathing regulation and relaxation. These components may influence cardiovascular regulation through several mechanisms, including relaxation, autonomic regulation and reduction in physiological responses to stress. Previous systematic reviews and meta-analyses have reported reductions in systolic and diastolic blood pressure following yoga interventions, although the magnitude of effects varies according to the population, intervention characteristics and methodological quality of the studies. A recent systematic review of clinical trials also reported that yogic practices involving *asana*, *pranayama*, relaxation and meditation were associated with favourable changes in physiological and biochemical markers related to cardiovascular health. Thus, systematic investigation of yogic practices among middle-aged women is relevant for understanding their possible contribution to maintaining physiological health (Ramesh & Malathy, 2022).

Methodology

The purpose of the study was to investigate the influence of six weeks of yogic practices on selected physiological variables, namely systolic blood pressure and diastolic blood pressure, among middle-aged women. For the purpose of the study, thirty middle-aged women from Thanjavur District, Tamil Nadu, were selected at random. The age of the subjects ranged from 30 to 45 years. The selected subjects were divided into two equal groups of fifteen subjects each.

- Group I: Experimental Group – 15 subjects
- Group II: Control Group – 15 subjects

The experimental group underwent yogic practices for six weeks, while the control group did not participate in the experimental training programme. A pre-test and post-test experimental design was adopted for the study. The selected physiological variables were assessed before the commencement of the training programme and again after six weeks of intervention. The pre-test and post-test mean differences were analysed using the paired *t*-ratio. The level of significance was fixed at 0.05. Since each group consisted of 15 subjects, the degrees of freedom were 14.

Results and Discussions

Table I

Descriptive Analysis of Pre-Test and Post-Test Means of Experimental and Control Groups on Selected Physiological Variables

S. No.	Variable	Experimental Pre-Test	Experimental Post-Test	Control Pre-Test	Control Post-Test
1	Diastolic Blood Pressure (mmHg)	84.60	80.00	84.93	84.46
2	Systolic Blood Pressure (mmHg)	125.26	121.00	125.12	125.04

The results presented in Table I indicate that the experimental group demonstrated a reduction in both systolic and diastolic blood pressure following six weeks of yogic practices.

Diastolic blood pressure decreased from 84.60 mmHg to 80.00 mmHg, while systolic blood pressure decreased from 125.26 mmHg to 121.00 mmHg. The control group showed only a small change in diastolic blood pressure, from 84.93 mmHg to 84.46 mmHg and in systolic blood pressure from 125.12mmHg to 125.04mmHg. This descriptive pattern suggests that the changes observed in the experimental group were greater than those observed in the control group.

Table II

Computation of *t*-Ratio Between the Pre-Test and Post-Test Means of Diastolic Blood Pressure of Experimental and Control Groups

Variable	Group	Mean Difference	SD	σ DM	<i>t</i> -Ratio
Diastolic Blood Pressure	Experimental	4.60	1.80	0.46	9.87*
	Control	0.46	2.66	0.68	0.67

Table II shows that the obtained *t*-ratio for diastolic blood pressure in the experimental group was 9.87, which was greater than the required table value of 2.14 at the 0.05 level of significance with 14 degrees of freedom. Therefore, the difference between the pre-test and post-test scores of the experimental group was statistically significant. The experimental group showed a mean reduction of 4.60 mmHg in diastolic blood pressure after six weeks of yogic practices. Hence, the hypothesis stating that yogic practices would produce a significant change in diastolic blood pressure was accepted. In contrast, the obtained *t*-ratio for the control group was 0.67, which was lower than the table value of 2.14. Therefore, the difference was not statistically significant. This indicates that the control group did not experience a significant change in diastolic blood pressure during the study period.

Figure I. Bar Diagram Showing Pre-Test and Post-Test Mean Scores of Diastolic Blood Pressure

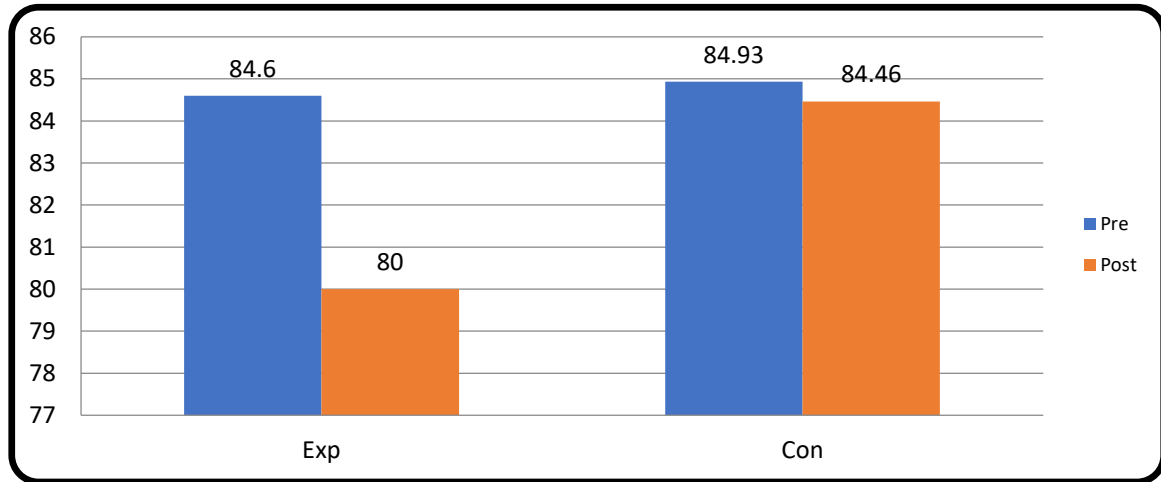


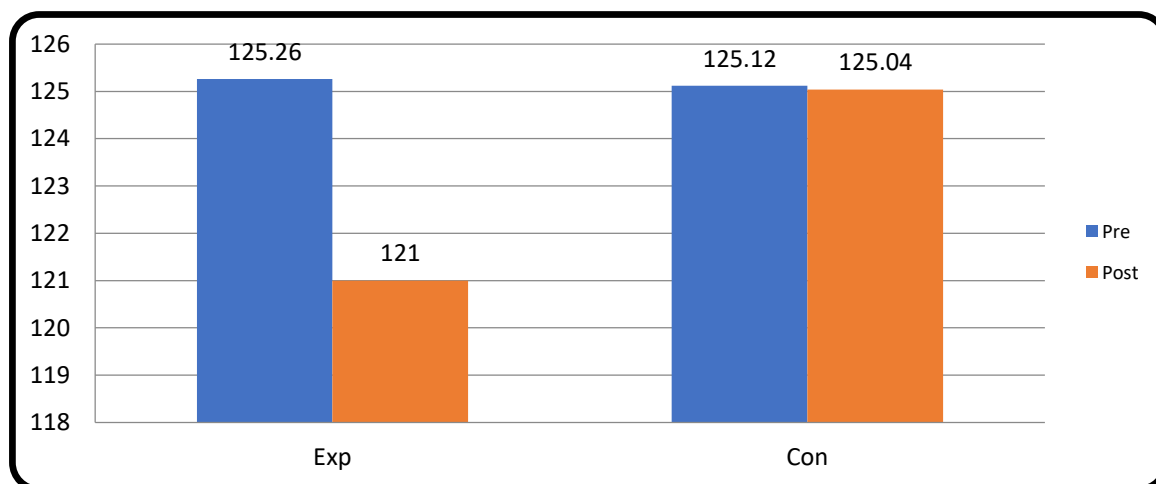
Table III

Computation of *t*-Ratio Between the Pre-Test and Post-Test Means of Systolic Blood Pressure of Experimental and Control Groups

Variable	Group	Mean Difference	SD	σ DM	<i>t</i> -Ratio
Systolic Blood Pressure	Experimental	4.26	2.43	0.62	6.78*
	Control	0.46	2.16	0.55	0.83

Table III reveals that the obtained *t*-ratio for systolic blood pressure in the experimental group was 6.78, which was greater than the required table value of 2.14 at the 0.05 level of significance for 14 degrees of freedom. Therefore, the difference between the pre-test and post-test scores was statistically significant. The experimental group demonstrated a mean reduction of 4.26 mmHg in systolic blood pressure following six weeks of yogic practices. Thus, the hypothesis concerning the improvement in systolic blood pressure was accepted. The obtained *t*-ratio of 0.83 for the control group was lower than the required table value of 2.14. Hence, the change in systolic blood pressure in the control group was not statistically significant. The present finding agrees generally with previous systematic reviews reporting that yoga may have favourable effects on systolic blood pressure. A 2019 systematic review and meta-analysis involving 49 controlled trials found an average reduction of approximately 5 mmHg in systolic blood pressure and 3.9 mmHg in diastolic blood pressure compared with control conditions.

Figure II. Bar Diagram Showing Pre-Test and Post-Test Mean Scores of Systolic Blood Pressure



Conclusion

1. Six weeks of yogic practices produced a significant reduction in diastolic blood pressure among the experimental group.
2. Six weeks of yogic practices produced a significant reduction in systolic blood pressure among the experimental group.
3. The control group did not show significant changes in the selected physiological variables.
4. Diastolic blood pressure, systolic blood pressure of experimental group showed significant difference when compared to control group.

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