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Effect of Simplified Kundalini Yoga on Systolic Blood Pressure and Pulse Rate Among Hypertensive Aged Women

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Abstract: When blood pressure against the artery walls rises dramatically, the condition is known as hypertension. Blood leaves the heart and travels via arteries on its way to the various organs and tissues. Older ladies with hypertension must practise a streamlined form of Kundalini yoga. The study's primary purpose was to determine whether or not older women with hypertension would benefit from simplified kundalini yoga by measuring changes in systolic blood pressure and pulse rate. To conduct the experiment, 30 hypertensive women aged 60-70 were recruited at random from the population of the Virudhunagar area and split into two groups, A and B, of 15 participants each. Simplified Kundalini yoga was anticipated to have a greater effect on hypertensive elderly women than the control group on a number of physiological indicators. Before beginning the training programme, both Groups (A and B) were given a pre-test on the aforementioned dependent variables. Group A received Simplified Kundalini yoga, while Group B (Control Group) did not get any therapy but engaged in active rest. Groups A and B were retested on the same dependent variables after eight weeks of experimentation. For this purpose, we compared the experimental group with the control group using analysis of co-variance (ANCOVA) to determine any statistically significant differences. At the 0.05 level of significance, the findings demonstrated that Simplified Kundalini yoga reduced systolic blood pressure and pulse rate in hypertensive middle-aged women. The results showed that hypertensive older women may benefit from a simplified Kundalini yoga practise in terms of maintaining a healthy systolic blood pressure and pulse rate.

Keywords: Systolic blood pressure, Pulse rate, Simplified kundalini yoga, Hypertensive aged women

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Introduction

As a person reaches old age, they need the psychological and social companionship of others. The pressure at which the blood is pushing

against the artery walls is known as blood pressure. Arteries are the body's principal blood vessels. High blood pressure, or hypertension, is a

medical condition. The chance of developing cardiovascular disease, dementia, stroke, renal failure, and a host of other illnesses is greatly increased in those with hypertension. Around two-thirds of the world's 1.28 billion individuals aged 30-79 have hypertension, and they all happen to be in poor and middle-income nations. As much as 46% of individuals with hypertension do not even realize they have it (Satyanand *et al.*, 2016). It is estimated that 33% of Indians live with hypertension, with the rate being much higher in metropolitan areas (40%). In India, just 25% of hypertensive people in rural areas and 42% of those in urban areas are aware of their condition. Around a third fewer Indians in urban areas than in rural areas get treatment for hypertension. One such complementary and alternative medicine therapy that has been shown to reduce hypertension is yoga.

The purpose of the study was to find out the effect of simplified Kundalini yoga on Systolic blood pressure and Pulse rate among hypertensive aged women. It was hypothesized that there would be significant differences on Systolic blood pressure and Pulse rate among hypertensive aged women due to simplified Kundalini yoga than the control group.

Limitations of the study were (a) a maximum age of 70 for participants, and (b) a restriction to participants living in the Virudhunagar district, (c) only women of hypertensive age participated in the study. Only physiological parameters, such as heart rate and systolic blood pressure, could serve as dependent variables in this study. Only Kundalini yoga was included as an independent variable.

In this study- (i) Socioeconomic factors, for example, were ignored, (ii) Climate was not taken into account, (iii) Considerations such as routines and routine activities were ignored, (iv) The individuals' normal routines were disregarded, (v) The individuals' diets and medication schedules were not monitored.

Materials and Methods

Thirty hypertensive women, aged 60 to 70, were recruited from the general population of Virudhunagar and randomly split into two groups of 15 individuals each. Each group (A and B) took a pre-training exam on the dependent variable of interest. Simplified kundalini yoga (Simplified physical exercises, Meditation, Kayakalpam, Agathaivu) was practised by Group A for 60 min, six days a week for a total of eight weeks. Those in Group B (the "control group") were not subjected to any special instruction and were instead allowed to lead their usual, everyday lives. Certain physiological indicators, including systolic blood pressure and pulse rate, were measured again after eight weeks for both groups. In order to determine whether or not there were statistically significant differences between the experimental and control groups, analysis of co-variance (ANCOVA) was used. It was decided to use a 5% level of confidence in the test of significance.

Results and Discussion

Analysis of covariance (ANCOVA) was used to compare the groups' pre- and post-training data on the dependent variable, and a 0.05 significance level was used to test the hypothesis. There was a statistically significant difference between the post test and adjusted post test means of the simplified kundalini yoga practise group and the control group on selected physiological variables, as indicated by the F-ratio value for systolic blood pressure and pulse rate being greater than Table 1 value.

As F value of 4.20 is required for significance at the 0.05 level, the resultant F value of 0.08 on pre-test scores is not significant (Table 1). This proved that pre-test randomization was accurate and that there were no significant disparities between test groups. Analyzing the results of the follow-up tests revealed statistically significant differences between the groups, with F value (468.3) that was much higher than the cutoff value of $F = 4.21$. Post-test scores varied

Table 1: Computation of mean and analysis of covariance of pulse rate of experimental and control group (beats per minute; BPM)

Test	Experimental Group	Control group	F
Pre-test mean	87.26	87.4	0.08
Post-test mean	77.66	87.46	468.3*
Adjusted mean	77.67	87.46	453.75*

* Significant at 0.05 level of confidence. (Table F-ratio for df 1 at 28 = 4.2 and for df 1 at 27=4.21)

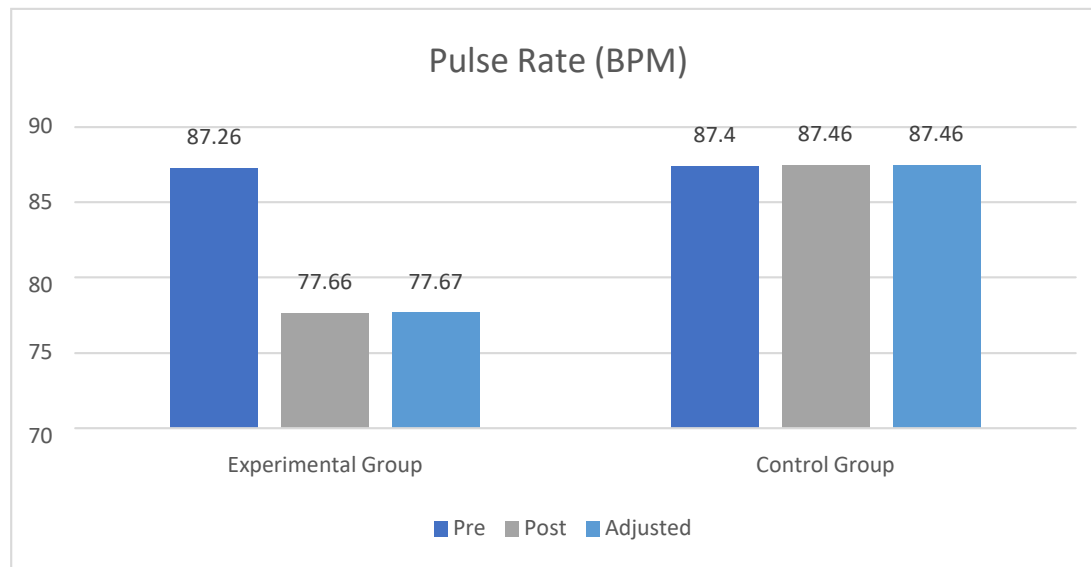


Fig.1: Adjusted post-test values of control group and experimental group on pulse rate.

Table 2: Computation of mean and analysis of covariance of systolic blood pressure of experimental and controlgroup (mmHg)

Test	Experimental Group	Control Group	F
Pre-test mean	138.80	135.47	1.92
Post- test mean	120.87	131.93	22.71*
Adjusted mean	119.86	132.94	46.98*

* Significant at 0.05 level of confidence. (The table value required for significance at 0.05 with df 1 and 28 and 1 and 27 are 4.20 and 4.21, respectively)

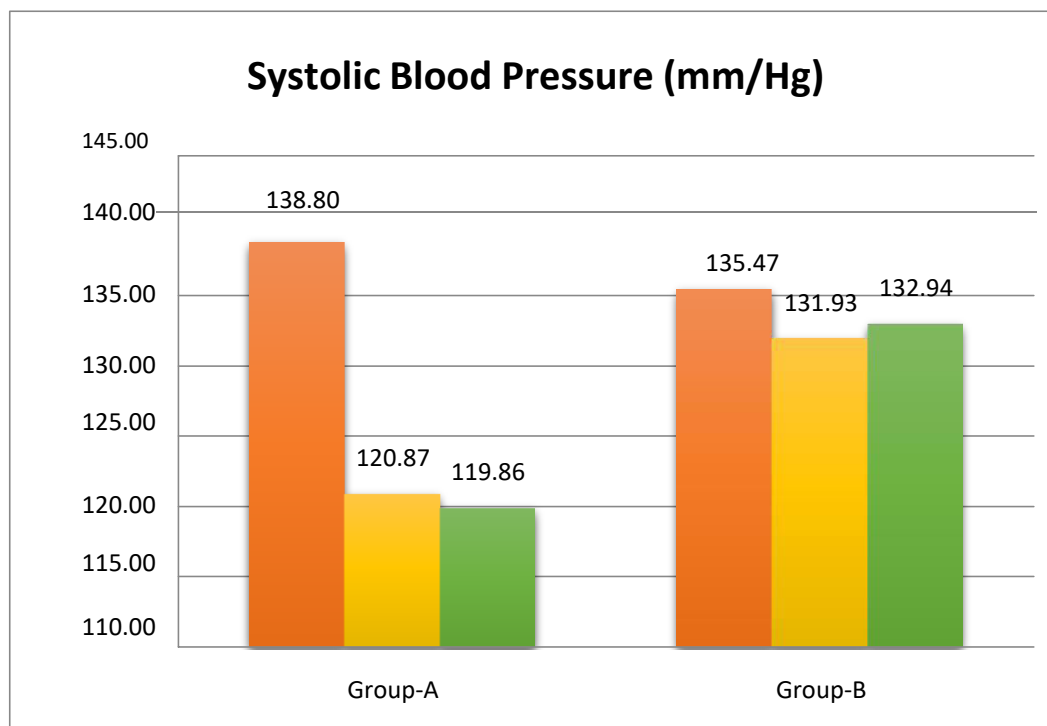


Fig. 2: Adjusted post-test values of control group and experimental group on systolic blood pressure (mmHg).

widely between the subjects, showing statistically significant differences. Based on the variations in test results between the groups pre- and post-therapy, adjusted mean scores were calculated and statistical analysis was conducted.

Research on the chosen physiological measure revealed that group A's heart rate differed significantly from the control group as a consequence of practising a streamlined form of kundalini yoga (Figs. 1, 2). As a result, the hypothesis was supported with a 0.05 level of certainty.

To be statistically significant at the 0.05 level, the F value on the pre-test scores required to be more than 1.92. This proved that the pre-test randomization was accurate and that there were no significant disparities between the test groups. Results from analysing post-test results showed a statistically significant split between the two groups, with a F value of 22.71 (Table 2) eclipsing the significance level set at $F = 4.21$ (Anchala *et al.*, 2014). Post-test scores varied widely between the subjects, showing statistically significant

differences. Based on the variations in test results between the groups pre- and post-therapy, adjusted mean scores were calculated and statistical analysis was conducted (Indulekha and Elangovan, 2020).

Research on a few key physiological markers found that group A's simplified kundalini yoga led to significant variations in systolic blood pressure. As a result, the hypothesis was supported with a 0.05 level of certainty.

Simplified kundalini yoga was expected to have a greater effect on systolic blood pressure and pulse rate in the Hypertensive Aged Women Group than in the Control Group. Tables show that at the 0.05 level of confidence, simplified kundalini yoga substantially reduced systolic blood pressure and pulse rate in hypertensive older women.

Conclusion

It may be concluded that the impact of Simplified Kundalini yoga (group A) resulted in a considerably lower pulse rate and systolic blood

pressure among hypertensive elderly women as compared to the control group. As a result, hypertensive elderly ladies may benefit from practising Simple Kundalini Yoga.

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