



EFFECT OF PRANAYAMA PRACTICES ON SELECTED PHYSIOLOGICAL VARIABLES AMONG COLLEGE GIRLS

K. Jagathis Babu*, A. Prem Edwin & I. Diravia Gladina*****

* Associate Professor and Head, Department of Physical Education, J.J College of Arts and Science, Pudukkottai, Tamil Nadu, India

** Director of Physical Education, St. Joseph's College (Autonomous), Tiruchirappalli, Tamil Nadu, India

*** Director of Physical Education, Holy Cross College (Autonomous), Tiruchirappalli, Tamil Nadu, India

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Abstract:

The objective of the present study was to find the effect of pranayama on selected physiological variables among college students. To achieve the purpose of the present study, 30 women college students from JJ College of Arts and Science, Pudukkottai, were selected as subjects at random and their ages ranged from 18 to 25 years. The selected variables were systolic blood pressure, diastolic blood pressure and pulse rate. For this study the true randomized experimental group design has been employed with two groups namely experimental and control group with 15 subjects each. A pilot study was conducted on all the selected tests item by the investigator. Ten subjects were selected at random and the experimental procedure was adapted to training groups. The experimental group underwent pranayama training for the period of twelve weeks. The pre and post test were conducted on all the selected variables. The Paired 't' test was used.

Key Words: Pranayama, Systolic Blood Pressure, Diastolic Blood Pressure, Pulse Rate

Introduction:

Pranayama, the yogic practice of regulated and controlled breathing, may positively influence these cardiovascular variables by promoting relaxation and improving autonomic balance. Slow and rhythmic breathing may enhance parasympathetic activity, reduce sympathetic stimulation, and consequently help regulate blood pressure and pulse rate. Research has reported significant reductions in systolic blood pressure, diastolic blood pressure and heart rate following breathing exercises, supporting the potential role of pranayama as a complementary yogic practice for cardiovascular health (Garg et al., 2024; Chaddha et al., 2019). Thus, the present study examines the effect of pranayama on systolic blood pressure, diastolic blood pressure and pulse rate. Systolic Blood Pressure, Diastolic Blood Pressure and Pulse Rate are important physiological indicators of cardiovascular health and are closely associated with the functioning of the heart and autonomic nervous system. Systolic Blood Pressure represents the pressure in the arteries during heart contraction, while Diastolic Blood Pressure represents the pressure during relaxation of the heart. Pulse Rate indicates the number of heart beats per minute and reflects cardiovascular and autonomic activity. Maintaining these variables within a normal range is essential for cardiovascular well-being, and elevated blood pressure is an important risk factor for cardiovascular diseases (World Health Organization, 2021).

Methodology:

The objective of the present study was to find the effect of pranayama on selected physiological variables among college students. To achieve the purpose of the present study, 30 women college students from JJ College of Arts and Science, Pudukkottai, were selected as subjects at random and their ages ranged from 18 to 25 years. The selected variables were systolic blood pressure, diastolic blood pressure and pulse rate. For this study the true randomized experimental group design has been employed with two groups namely experimental and control group with 15 subjects each. A pilot study was conducted on all the selected tests item by the investigator. Ten subjects were selected at random and the experimental procedure was adapted to training groups. The experimental group underwent pranayama training for the period of twelve weeks. The pre and post test were conducted on all the selected variables. The Paired 't' test was used.

Results:

Table 1: Descriptive Analysis of Pre and Post Test Means of Experimental and Control Group on Selected Physiological Variables

S.No	Variables	Experimental Group		Control Group	
		Pre Test Mean	Post Test Mean	Pre Test Mean	Post Test Mean
1	Systolic Blood Pressure	123.86	120.00	123.13	122.40
2	Diastolic Blood Pressure	83.33	80.33	84.00	84.73
3	Pulse Rate	73.80	71.00	74.46	73.73

Table 2: Computation of 't' Ratio Between the Pre Test and Post Test Means of Systolic Blood Pressure of Experimental and Control Group

S.No	Variables	Groups	Mean diff	SD	σ DM	't' ratio
1	Systolic Blood Pressure	Exp	3.86	2.32	0.60	6.43*
		Con	0.73	3.08	0.79	0.92

*Significant at 0.05 level

An examination of table 2 indicates that the obtained 't' ratio for systolic blood pressure of experimental group was 6.43. The obtained 't' ratio on systolic blood pressure was found to be greater than the required table value of 2.14 at 0.05 level of significance for 14 degrees of freedom. So it was found to be significant. The obtained 't' ratio for systolic blood pressure of control group was 0.92. The obtained 't' ratio on systolic blood pressure was found to be lesser than the required table value of 2.14 at 0.05 level of significance for 14 degrees of freedom. So it was found to be not significant.

Figure 1: Bar Diagram Showing the Pre Mean and Post Mean of Systolic Blood Pressure of Experimental and Control Group

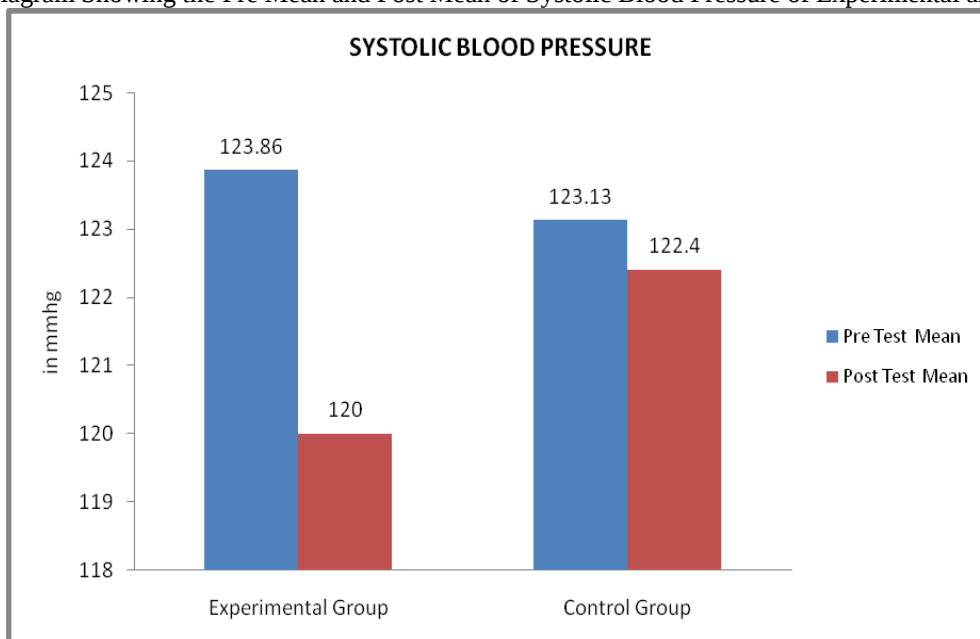


Table 3: Computation of 't' Ratio Between the Pre Test and Post Test Means of Diastolic Blood Pressure of Experimental and Control Group

S.No	Variables	Groups	Mean diff	SD	σ DM	't' ratio
1	Diastolic Blood Pressure	Exp	3.00	2.07	0.53	5.61*
		Con	0.26	2.81	0.72	0.36

*Significant at 0.05 level

An examination of table 3 indicates that the obtained 't' ratio for diastolic blood pressure of experimental group was 5.61. The obtained 't' ratio on diastolic blood pressure was found to be greater than the required table value of 2.14 at 0.05 level of significance for 14 degrees of freedom. So it was found to be significant. The obtained 't' ratio for diastolic blood pressure of control group was 0.36. The obtained 't' ratio on diastolic blood pressure was found to be lesser than the required table value of 2.14 at 0.05 level of significance for 14 degrees of freedom. So it was found to be not significant.

Figure 2: Bar Diagram Showing the Pre Mean and Post Mean of Pulse Rate of Experimental and Control Group

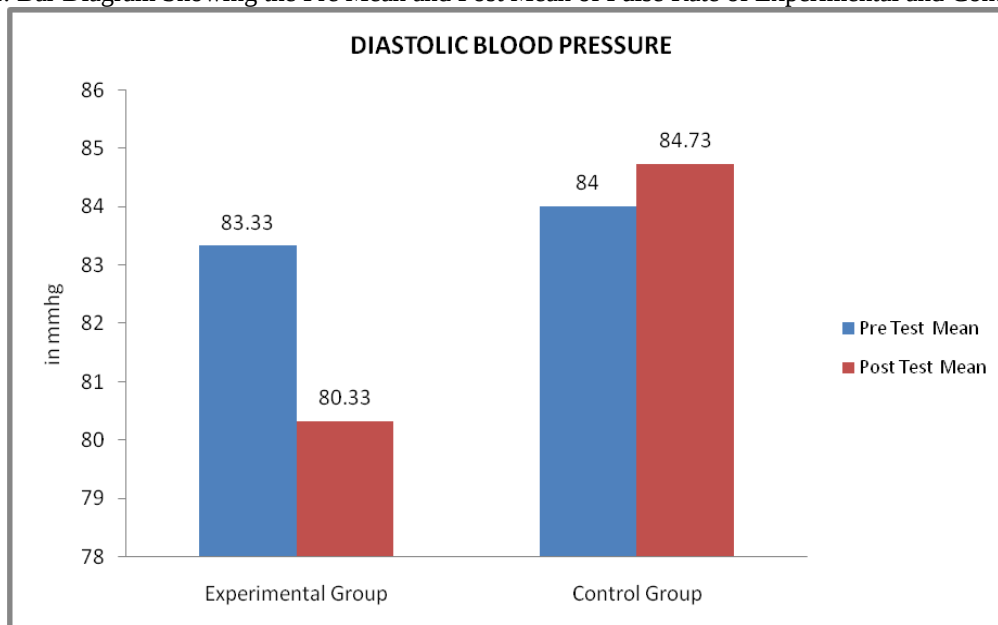


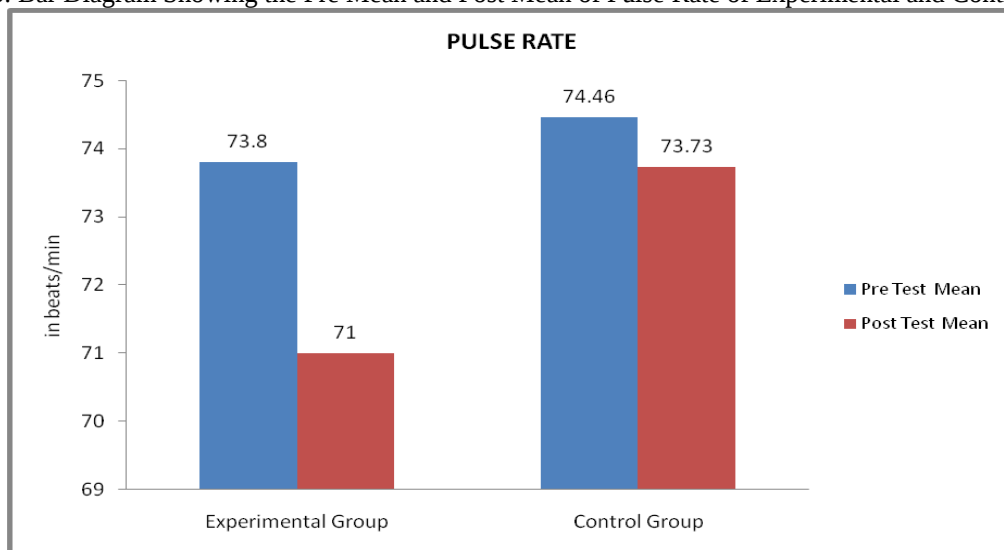
Table 4: Computation of 't' Ratio Between the Pre Test and Post Test Means of Pulse Rate of Experimental and Control Group

S.No	Variables	Groups	Mean diff	SD	σ DM	't' ratio
1	Pulse Rate	Exp	2.80	1.52	0.39	7.12*
		Con	0.73	2.25	0.58	1.26

*Significant at 0.05 level

An examination of table IV indicates that the obtained 't' ratio for pulse rate of experimental group was 7.12. The obtained 't' ratio on pulse rate was found to be greater than the required table value of 2.14 at 0.05 level of significance for 14 degrees of freedom. So it was found to be significant. The obtained 't' ratio for pulse rate of control group was 1.26. The obtained 't' ratio on pulse rate was found to be lesser than the required table value of 2.14 at 0.05 level of significance for 14 degrees of freedom. So it was found to be not significant.

Figure 3: Bar Diagram Showing the Pre Mean and Post Mean of Pulse Rate of Experimental and Control Group



Conclusions:

- The result of the study reveals that there was a significant decrease in the systolic blood pressure, diastolic blood pressure and pulse rate after the completion of six weeks of pranayama training.
- The result of the study also reveals that the experimental group showed significant difference than the control group.

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