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EFFECT OF PRANAYAMA ON SELECTED PHYSIOLOGICAL VARIABLES AMONG COLLEGE STUDENTS

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Abstract:

The purpose of the study was to investigate the effect of pranayama on selected physiological variables among college students. It was hypothesized that there would be significant differences on physiological variables due to the effect of pranayama among college students. For the present study the 30 male college students from Government College, Chittur were selected at random and their age ranged from 18 to 21 years. For the present study pre test - post test random group design which consists of control group and experimental group was used. The subjects were randomly assigned to two equal groups of fifteen each. Group 'A' underwent pranayama only, group 'B' have not underwent any training. The data was collected before and after twelve weeks of training. The data was analyzed by applying Analysis of Co-Variance (ANCOVA) and scheffe's post hoc test. It was observed that the six weeks of pranayama have significantly improved the selected physiological fitness variables of college students.

Key Words: Pranayama, Blood Pressure, College Students

Introduction:

Breath is the life force that sustains life. Nobody can survive more than a few minutes without air. When the breath stops, life ends. The Forefathers of Yoga developed a special system 'Pranayama' to increase, develop and control this life force. Normal breathing uses only a fraction of our potential respiratory capacity. Pranayama helps to control this life force in a superior and extra ordinary way to reap maximum benefits. Pranayama is used in yoga to clear and cleanse the body and mind. It is also used in preparation for meditation, asanas, postures and focusing of the mind. Pranayama create alertness, heat on both physical and subtle levels, and arouse body, mind and spirit or kundalini power. The purpose of Pranayama is to make the respiratory system function at its best. Pranayam is not as complex as it is thought to be. The ancient Sanskrit texts state that Pranayam properly done can cure all diseases, but wrongly done will only invite the same diseases (Bargava et al. 2006).

Methodology:

The purpose of the study was to investigate the effect of pranayama on selected physiological variables among college students. It was hypothesized that there would be significant differences on physiological variables due to the effect of pranayama among college students. For the present study the 30 male college students from Government College, Chittur were selected at random and their age ranged from 18 to 21 years. For the present study pre test - post test random group design which consists of control group and experimental group was used. The subjects were randomly assigned to two equal groups of fifteen each. Group 'A' underwent pranayama only, group 'B' have not underwent any training. The data was collected before and after twelve weeks of training. The data was analyzed by applying Analysis of Co-Variance (ANCOVA) and scheffe's post hoc test. The level of significance was set at 0.05.

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

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. The mean scores of systolic blood pressure of experimental group and control group was shown graphically in figure 1.

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

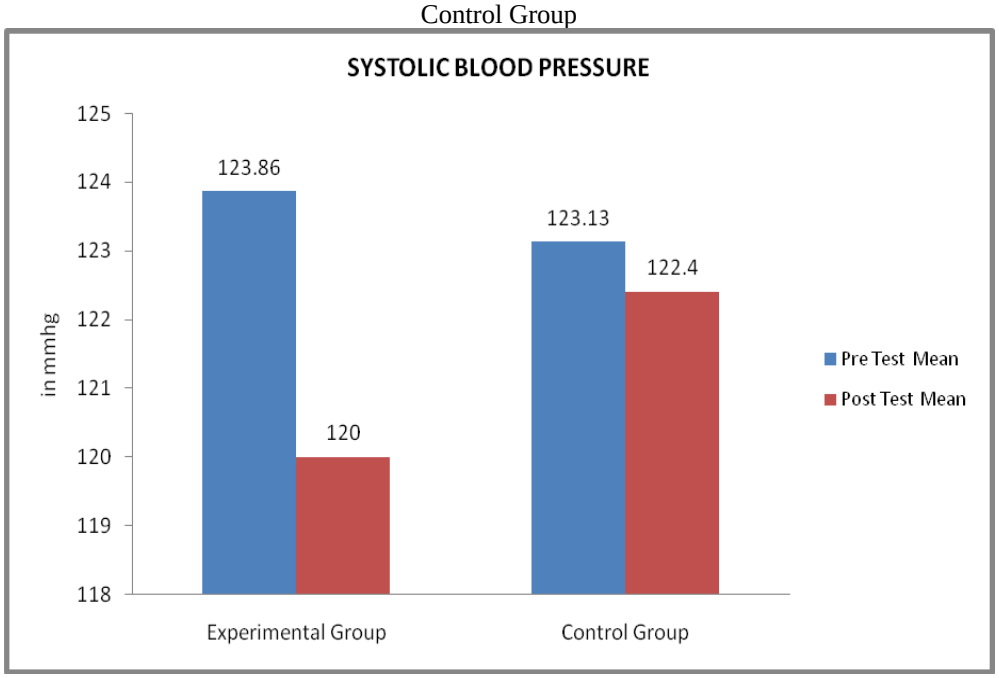


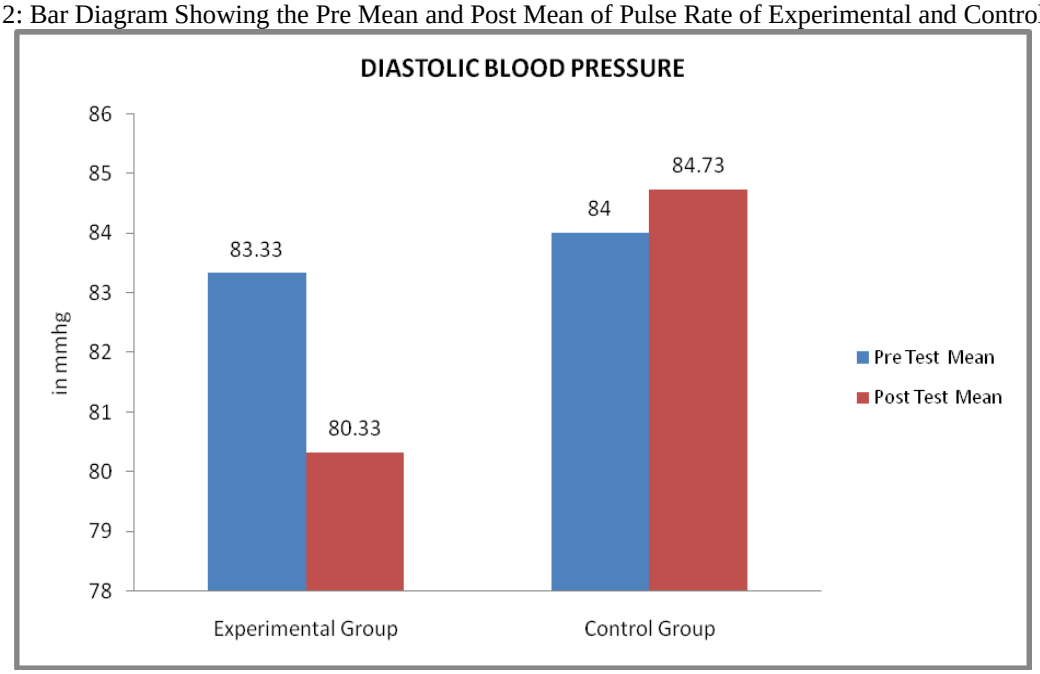
Table 3: Computation of 't' Ratio Between the Pre Test and Post Test Means of Diastolic Blood Pressure of Experimental and Control Group

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. The mean scores of diastolic blood pressure of experimental group and control group was shown graphically in figure 2.

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



Discussion:

The study supports the findings of Ankad et al. (2011) conducted to ascertain if a short-term practice of pranayama and meditation had improvements in cardiovascular functions. Pre and post yoga cardiovascular functions were assessed by recording pulse rate, systolic blood pressure, diastolic blood pressure, and mean blood pressure. This study showed beneficial effects of short term (15 days) regular pranayama and meditation practice on cardiovascular functions. Raghavendra et al. (2013) designed a study to understand the strategies used by yoga practitioners and autonomic changes associated with voluntary heart rate reduction. Hence, in the 'during' state of Trial 2, subjects were asked to voluntarily reduce their heart rate by breath regulation. In the first trial, the heart rate was reduced by an average of 19.6 beats per minute and in the second trial (with breath regulation exclusively) an average decrease of 22.2 beats per minute was achieved. Hence, the strategy used did not markedly alter the outcome.

Conclusions:

- It was observed that the six weeks of pranayama have significantly improved the selected physiological fitness variables of college students.
- The experimental group had achieved significant improvement due to pranayama and has significantly improved the selected physiological fitness variables of college students when compared to control group.

References:

1. Ankad, R. B, Herur, A., Patil, S., Shashikala, G.V. & Chinagudi, S. (2011). Effect of Short Term Pranayama and Meditation on Cardiovascular Functions in Healthy Individuals. Heart Views. 12(2):58-62.
2. Bhargava R, Gogate MG, Mascarenhas JF. (1998) Autonomic Responses to Breath Holding. Indian J Physiol Pharmacol. 32(4):257-64.
3. Bhargava R, Gogate M G, Mascarenhas JF (2006) Autonomic Responses to Breath Holding in Healthy Young Women. Indian J Physiol Pharmacol.; 32(4):257-64.
4. Chattha R, Raghuram N, Venkatram P, Hongasandra NR. (2008) Treating the Climacteric Symptoms in Indian Women With an Integrated Approach to Yoga Therapy, A Randomized Control Study Menopause; 15(5):862-70.
5. Cornelius Gross and Rene Hen. (1996) The Development of Origins of Anxiety; de 32 (4):257-64.
6. Dasgupta, B Panda, A K Bhattacharya.(1982). Physical Efficiency Tests on Indian Kabaddi Intger University Players Sports Brj Med 1982:16:33-36.
7. Devaki P. (2004) Yoga as Neuropsychological Modifier Via Paradarami. Int J Psychol.2004 /Pages 4/4043.3.
8. Fernandez-Fernandez J, Mendez-Villanueva A, Fernandez-Garcia B, Terrados N. (2006). Match Activity and Physiological Responses during a Junior Female Singles Tennis Tournaments. University of Leon, C ampus de Vegazana,s/n 24071, Spain.
9. Raghavendra, B., Telles, S., Manjunath, N., Deepak, K., Naveen, K. & Subramanya, P. (2013). Voluntary Heart Rate Reduction Following Yoga Using Different Strategies. Int J Yoga. 6(1):26-30.