



EFFECTS OF YOGIC PRACTICES AND PHYSICAL EXERCISES ON RANDOM BLOOD SUGAR AMONG MIDDLE AGED MEN

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ABSTRACT

The aim of the study was designed to determine the effect of yogic practices and Physical Exercises on Random Blood Sugar Among the middle age men. To attain the purpose sixty (N=60) middle aged men from in and around Pudukkottai, Pudukkottai District, Tamilnadu, India were randomly selected as subjects. They were divided randomly into four groups of fifteen each i.e., (n=15) Group-I underwent Yogic Practices, Group-II underwent Physical Exercises, Group-III underwent Yogic Practices and Physical Exercises and Group-IV was act as Control. The Experimental groups underwent respective training period for three days per week for twelve weeks. For Yogic Practices and Physical Exercises the training period was restricted to twelve alternative weeks and the number of sessions per week was also confined to three. The dependent variables selected for this study was Random Blood Sugar, and it was assessed by Blood sample tests. All the subjects were tested prior to and immediately after the experimental period on the selected dependent variable. The data obtained from the experimental groups before and after the experimental period were statistically analyzed with dependent 't'-test and Analysis of covariance (ANCOVA). Whenever the 'F' ratio for adjusted post test means was found to be significant, the Scheffe's Post hoc test was applied to determine the paired mean differences. The level of confidence was fixed at 0.05 level for all the cases. Experimental groups namely, Yogic Practices group, Physical Exercises group and Yogic Practices group and Physical Exercises group had significantly decreased in Random Blood Sugar.

Key Words: Yogic practices, Physical Exercises, Random Blood Sugar.

INTRODUCTION

Yoga has been practiced in India for over two millennia. Stories and legends from ancient times testify to the existence of yoga, and to the practitioners and divinities associated with it. Indian literature is a storehouse of knowledge about yoga covering every conceivable level. Roughly in chronological order are the vocals (books of Scriptural knowledge), the Upanishada (philosophical cosmologies), and their commentaries; then the Puranas (ancient cosmologies), and the two epics, the Ramayana and the Mahabharatha. The Mahabharatha contains within itself that masterpiece of Indian scripture the Bhagavad Gita. Towards the end of Vedic period comes the aphoristic literature, with the "Yoga Aphorisms" of Patanjali of special interest to yoga students. (Jyotsna et al., 2014).

Although the word 'yoga' has many connotations, etymologically it means "Integration". The term 'Samatva' of Bhagavat Gita conveys the same meaning. Other terms like homeostasis, equilibrium, balance, harmonious development etc. more or less suggest the same things. The aim of

yoga itself is an integration of personality in its all aspects. In order to help the development of such integration various techniques are employed. These techniques or practices enjoined in Yogic literature and handed down in different traditions also go under the name of yoga (Dattilo and Etherton, 1992).

Exercise occupies a lead role in keeping a person fit. It will be quite difficult to adjust one's life in terms of stress, diet, sleep and so on without proper exercise. According to plato, lack of activity destroys the good condition of every human being while movement and methodical physical exercise save it and preserve it. Exercise means using and toning the body. Exercise builds and maintains physical fitness (Tsimeas 2005).

Physical exercise is a capsule for better living. With regular exercise, coronary arteries that supply blood to the heart enlarge and new blood capillaries develop within the organ larger, stronger and more efficient. Exercise increases the strength and efficiency of the muscles of the rib cage and diaphragm. This causes an increase in the lung volume, enabling a person to take in more air and

thus absorb more oxygen. A person who exercises regularly breathes more slowly at rest than one who does not work out. But, when required, he or she can breathe deeply and oxygenate a given volume of blood, spending less energy. Exercise increases the size of existing blood vessels and makes them more elastic. It promotes the formation of new blood vessels not only in the heart, but also in the skeletal muscles, thus improving the oxygen supply to all parts of the body.

Exercise increases the total blood volume in the body, the density of red blood cells and the haemoglobin content. This increases the efficiency of the body's oxygen transport system as well as the waste disposal mechanism, leading to improved muscular endurance and efficiency. Exercise helps to burn calories not only when exercising, but burns calories at a higher rate even after finished exercising and converts them into muscle tissues. "High levels of blood cholesterol are strongly associated with heart attacks. Regular exercise will lower cholesterol levels. Exercise brings down high blood pressure; reduces body fat and increases muscle mass; helps reduce weight; keeps blood sugar under control; relieves muscle and joint pains; reduce stress; prolongs life; exercise improves feeling of well being (Arun, 2017).

METHODOLOGY

The study was conducted on sixty (N=60) middle aged men from in and around Pudukkottai, Pudukkottai District, Tamilnadu, India were randomly selected as subjects. They were divided randomly into four groups of fifteen each i.e., (n=15) Group-I underwent Yogic Practices, Group-II underwent Physical Exercises, Group-III underwent Yogic Practices and Physical Exercises and Group-IV was act as Control. The Experimental groups underwent respective training period for three days per week for twelve weeks. For Yogic Practices and Physical Exercises the training period was restricted to twelve alternative weeks and the number of sessions per week was also confined to three. The dependent variables selected for this study was Random Blood Sugar, and it was assessed by Blood sample tests.

ANALYSIS OF THE DATA

The results of the Analysis of Covariance on Random Blood Sugar of the pre, post, and adjusted test scores of Yogic Practices group, Physical Exercises group, Yoga Practices and Physical Exercises group and Control group are presented in Table -1.

TABLE – 1
ANALYSIS OF COVARIANCE ON RANDOM BLOOD SUGAR OF EXPERIMENTAL GROUPS AND CONTROL GROUP

Test	Yogic Practices Group	Physical Exercises Group	Practices and Physical Exercises	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	F ratio
Pre Test Mean	183.13	183.21	181.93	179.47	Between	134.45	3	44.82	1.46
					Within	1722.13	56	30.75	
Post Test Mean	169.27	169.73	155.27	179.67	Between	4528.85	3	1509.62	25.28*
					Within	3344.13	56	59.72	
Adjusted Post Test Mean	168.25	168.71	155.25	181.72	Between	5127.48	3	1709.16	44.12*
					Within	2130.66	55	38.74	

* Significant at 0.05 level of confidence
(Random Blood Sugar Scores in mg/dL)

Table value for df (3, 56) at 0.05 level = 2.76 Table value for df (3, 55) at 0.05 level = 2.78

The above table-1 shows that the pre-test mean values on Random Blood Sugar of Yogic Practices group, Physical Exercises group, Yoga Practices and Physical Exercises group and Control group are 183.13, 183.21, 181.93 and 179.47 respectively. The obtained 'F' ratio of 1.46 for pre-test scores was lesser than the table value of 2.76 for degrees of freedom 3 and 56 required for significance at 0.05 level of confidence on Random Blood Sugar.

The post test mean values on Random Blood Sugar of Yogic Practices group, Physical Exercises group, Yoga Practices and Physical Exercises group and Control group are 169.27, 169.73, 155.27 and 179.67 respectively. The obtained 'F' ratio of 25.28 for post-test scores was higher than the table value of 2.76 for degrees of freedom 3 and 56 required for significance at 0.05 level of confidence on Random Blood Sugar. The adjusted post-test means on

Random Blood Sugar of Yogic Practices group, Physical Exercises group, Yoga Practices and Physical Exercises group and Control group are 168.25, 168.71, 155.25 and 181.72 respectively. The obtained 'F' ratio of 81.59 for adjusted post-test scores was higher than the table value of 44.12 for degrees of freedom 3 and 55 required for significance at 0.05 level of confidence on Random Blood Sugar. The results of the study indicate that there are significant differences among the adjusted post test means of Yogic Practices group, Physical Exercises group, Yoga Practices and Physical Exercises group and Control group in Random Blood Sugar. To determine which of the paired means have a significant difference, the Scheffe's test is applied as Post hoc test and the results are presented in Table – 2.

TABLE – 2
THE SCHEFFE’S TEST FOR THE DIFFERENCES BETWEEN
THE ADJUSTED POST TEST PAIRED MEANS ON
RANDOM BLOOD SUGAR

Adjusted Post-test Means				Mean Difference	Confidence Interval
Yogic Practices Group	Physical Exercises Group	Practices and Physical Exercises	Control Group		
168.25	168.71			0.47	6.55
168.25		155.25		12.99*	6.55
168.25			181.72	13.48*	6.55
	168.71	155.25		13.46*	6.55
	168.71		181.72	13.01*	6.55
		155.25	181.72	26.47*	6.55

* Significant at 0.05 level of confidence

Table-2 shows that the adjusted post test mean differences on Random Blood Sugar between Yogic Practices group and Physical Exercises Group, Yogic Practices group and Control group Physical Exercises group and Yogic Practices group and Physical Exercises Group, Physical Exercises group and Control group, Yogic Practices group and Physical Exercises Group and Control group are 12.99, 13.48, 13.46, 13.01 and 26.47 respectively, which are greater than the confidence interval value of 6.55 on Random Blood Sugar at 0.05 level of confidence. Further the table-2

shows that the adjusted post test mean differences on Random Blood Sugar between Yogic Practices group and Physical Exercises group, is 0.47. This is lesser than the confidence interval value of 0.19 on Random Blood Sugar at 0.05 level of confidence. The results of the study showed that there was a significant difference between Yogic Practices group and Physical Exercises Group, Yogic Practices group and Control group Physical Exercises group and Yogic Practices group and Physical Exercises Group, Physical Exercises Group, Physical Exercises group and Control group, Yogic Practices group and Physical

Exercises Group and Control group on Random Blood Sugar. Further the results of the study showed that there was no significant difference between Yogic Practices group and Physical Exercises group on Random Blood Sugar.

The above data also reveal that Yogic Practices group and Physical Exercises Group had shown better performance than Yogic Practices group, Physical Exercises group and Control group in Random Blood Sugar. The pre and post mean values

of Yogic Practices group, Physical Exercises group, Yogic Practices group and Physical Exercises group, and Control group on Random Blood Sugar are graphically represented in the Figure -1. The adjusted post mean values of Yogic Practices group, Physical Exercises group, Yogic Practices group and Physical Exercises group, and Control group on Random Blood Sugar are graphically represented in the Figure -2.

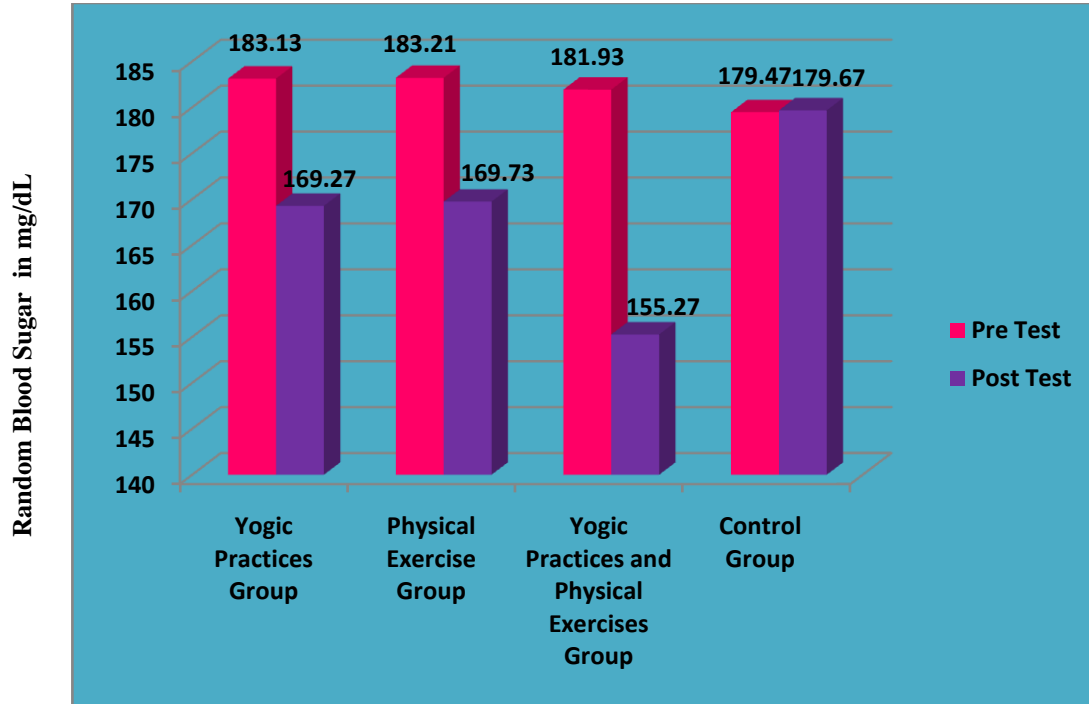


FIGURE 1 THE PRE AND POST TEST MEAN VALUES OF YOGIC PRACTICES GROUP, PHYSICAL EXERCISES GROUP, YOGIC PRACTICES GROUP AND PHYSICAL EXERCISES GROUP, AND CONTROL GROUP ON RANDOM BLOOD SUGAR

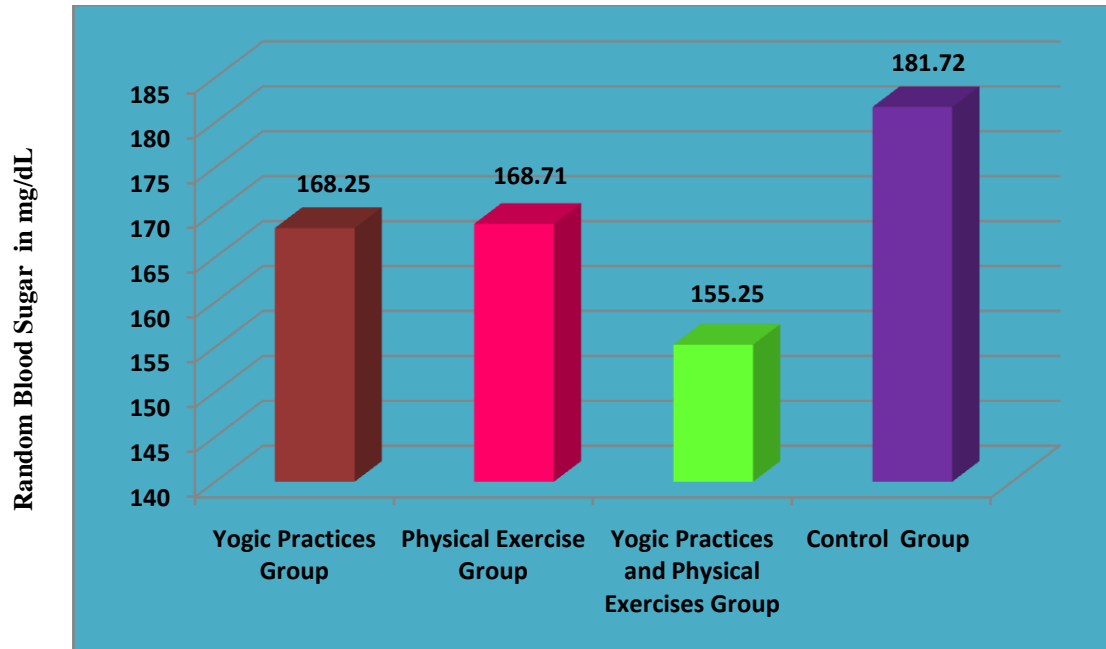


FIGURE 2 THE ADJUSTED POST MEAN VALUES OF YOGIC PRACTICES GROUP, PHYSICAL EXERCISES GROUP, YOGIC PRACTICES GROUP AND PHYSICAL EXERCISES GROUP, AND CONTROL GROUP ON RANDOM BLOOD SUGAR

CONCLUSION

From the analysis of the data, the following conclusions were drawn.

1. The Experimental groups namely, Yogic Practices group, Physical Exercises group and Yogic Practices group and Physical Exercises group had significantly decreased in the Random Blood Sugar.
2. Significant differences in achievements were found between Yogic Practices group, Physical Exercises group and Yogic Practices group and Physical Exercises group and Control group in selected criterion variables such as Random Blood Sugar.
3. The Yogic Practices group and Physical Exercises group was found to have greater impact on the group concerned than the Yogic Practices group, Physical Exercises group and Control group in decreasing the performance of Random Blood Sugar.

REFERENCES

1. Arun.C (2017), Effect of Yogasanas and Suryanamaskar on Selected Psychological Variables among College Men Volleyball Players, *Indian Journal of Physical Education, Sports and Applied Science*, Vol.7, No: 2, April.
2. Dattilo, AM. and Kris-Etherton, PM., (1992), "Effects of Weight Reduction on Blood Lipids and Lipoproteins: A MetaAnalysis", *American Journal of Clinical Nutrition*, 56(2), pp.320-328.
3. Jyotsna VP, Dhawan A, Sreenivas V, Deepak KK, Singla R(2014), Completion report: Effect of Comprehensive Yogic Breathing program on type 2 diabetes: A randomized control trial, *Indian J Endocrinol Metab.* Jul;18(4): 582-4.
4. Tsimeas, P. D.,(2005), "Does living in urban or rural settings affect aspects of physical fitness in children? An allometric approach," *British Journal Of Sports Medicine*, 39 (9), pp.671-674.