



## Influence of Yogic Practices on Selected Bio-Chemical Variables among Obese Children

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### Abstract

The purpose of the present study was to find out the influence of yogic practices on selected bio-chemical variables among obese children. To achieve the purpose of the present study, thirty obese children from Tiruchirappalli, Tamilnadu, India were selected as subjects at random and their ages ranged from 9 to 12 years. The selected subjects are divided in to two groups. Group I acted as yogic practices group and Group II acted as control group. The experimental group participated yogic practices programme for twelve weeks duration. The control group was not undergone any training other than their daily routine. The criterion measures fasting plasma glucose and HDL was assessed by blood test. The two groups were statistically analysed by using analysis of covariance (ANCOVA) at 0.05 level. The result of the study reveals that there was a significant improvement in the experimental group on selected variables when compared to the control group after the completion of twelve weeks of yogic practices.

**Keywords:** Yogic Practices, Bio-chemical, Obese children.

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### Introduction

Yoga is an ancient form of relaxation and exercise that has many health benefits, including lowering cholesterol. Pranayama also helps to connect the body to its battery, the solar plexus, where tremendous potential energy is stored. When tapped through specific techniques of this vital energy or prana, is released for physical, mental and spiritual rejuvenation. Regular practice removes obstructions, which impede the flow of vital energy. When the cells work in unison, they brings back harmony and health to the system. 20 to 25 minutes (every morning or evening) of pranayama practice increases the capacity of the lungs, breathing efficiency, circulation, cardiovascular efficiency. It also helps to normalize blood pressure, strengthens and tones the nervous system, combats anxiety and depression, improves sleep, digestion and excretory functions. It provides massage to the internal organs, stimulates the glands, enhances endocrine functions, normalizes the body weight, provides great conditioning for weight loss, improves skin tone and complexion (Iyengar, 1986).

Yoga is a way of life. It is an integrated system of education for the body, mind and inner spirit. Thousands of years ago, this art of right living was perfected and practiced in India, as yoga deals with the universal truths and its teachings are valid today. Yoga is

a practical aid and does not belong to one religion and its techniques could be practiced by the Buddhists, Jews, Christians, Muslims, Hindus and the Atheists alike. Yoga is union with all. It brings peace to the human beings by physical practices with or without a toner on spiritualism. As we live in the age of modern science and technology. Hence, our life style has become very fast. It is also becoming very hard and difficult to live a natural and normal life, because of the changing scenario of the world. An air is becoming unfit for human consumption. Our cities are growing noisier, dirtier and congested. All these things do create tension to the man. The mind is always under strain due to various social evils. When we are under stress, our digestion is not proper so that we may suffer from some fairly serious ailments like Asthma and Spondylitis etc., and yoga practice comes to our rescue at this juncture.

### Review of Related Literature

Kasirajan & Karuppiah (2016) examined the effect of yogic practice on selected physical variables among school level handball players. To achieve this purpose of the study, thirty school students were selected as subjects who were from the St. Claret's higher Secondary school, Karumathur and Government Higher secondary School, Vadakkampatti. The selected subjects were aged between 14 to 17 years. They were divided into two equal groups of fifteen each, Group-I underwent yogic exercise programme and Group-II acted as control that did not participate in any special training apart from their regular curricular activities. The experimental group underwent the training programme for three days per

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week for eight weeks. Among the physical variables such as flexibility was measuring by sit and reach test and cardiorespiratory endurance was measuring by 12 min run and walk test. The data were collected at prior and immediately after the training programme for each criterion variables. Analysis of covariance (ANCOVA) was applied for analyze the data. In all the cases, 0.05 level was used to test this significance. The findings of the study showed that there was no significant difference between the pre-test of Flexibility and Cardio respiratory endurance. The findings of the study showed that there was a significant difference between the post-test and adjusted post-test of Flexibility and Cardio respiratory endurance.

Chandrakumar & Ramesh (2016) determined the best training packages among the yogic practices, aerobic exercise and interval training on selected health related physical fitness namely cardio respiratory endurance and flexibility among school boys. To achieve the purpose of the present study, sixty school boys from Dindigul district, Tamilnadu were selected as subjects at random and their ages ranged from 13 to 17 years. The subjects were divided into four equal groups of fifteen school boys each. The study was formulated as a true random group design, consisting of a pre-test and post-test. The subjects (N=60) were randomly assigned to four equal groups of fifteen school boys each. The groups were assigned as yogic practices, aerobic exercises, interval training and control group in an equivalent manner. The group I underwent yogic practices, group II underwent aerobic exercises, group III underwent interval training and group IV acted as a control group. The three experimental groups were participated the training for a period of twelve weeks to find out the outcome of the training packages and the control group did not participated in any training programme. The variable to be used in the present study was collected from all subjects before they have to treat with the respective treatments. It was assumed as pre-test. After completion of treatment they were tested again as it was in the pre-test on all variables used in the present study. This test was assumed as post-test. The following statistical techniques were adopted to treat the collected data in connection with established hypothesis and objectives of this study. Analysis of covariance (ANCOVA) was applied because the subjects were selected random, but the groups were not equated in

relation to the factors to be examined. Hence the difference between means of the four groups in the pre-test had to be taken into account during the analysis of the post-test differences between the means. This was achieved by the application of the analysis of covariance, where the final means were adjusted for differences in the initial means, and the adjusted means were tested for significance. Whenever the adjusted post-test means were found significant, the scheffe's post-hoc test was administer to find out the paired means difference. To test the obtained results on variables, level of significance 0.05 was chosen and considered as sufficient for the study. The significant mean difference does not exist among the experimental groups in the pre test on cardio respiratory endurance and flexibility. In testing post test mean difference among the experimental groups statistically significant on variables of cardio respiratory endurance and flexibility. In testing the post adjusted mean among the experimental groups also predicts the above result. In comparing the effect the YPG showed better performance on flexibility. In comparing the effect the AEG and ITG produced similar effect on both the variables.

### Methodology

The purpose of the present study was to find out the influence of yogic practices on selected bio-chemical variables among obese children. To achieve the purpose of the present study, thirty obese children from Tiruchirappalli, Tamilnadu, India were selected as subjects at random and their ages ranged from 9 to 12 years. The selected subjects are divided in to two groups. Group I acted as yogic practices group and Group II acted as control group. The experimental group participated yogic practices programme for twelve weeks duration. The control group was not undergone any training other than their daily routine. The criterion measures fasting plasma glucose and HDL was assessed by blood test. The two groups were statistically analysed by using analysis of covariance (ANCOVA) at 0.05 level.

### Results and Discussion

The detailed procedure of analysis of data and interpretation were given below,

**Table I.** Summary of Descriptive Statistics on Selected Motor Fitness Components among Obese children

S.No	Variables	ERTG					CG				
		Pre	SD (±)	Post	SD (±)	Adjusted Mean	Pre	SD (±)	Post	SD (±)	Adjusted Mean
1	Fasting plasma glucose	90.21	2.31	88.75	2.20	88.69	91.04	2.23	91.00	2.01	91.01
2	HDL	60.43	1.80	65.31	2.55	65.30	60.72	2.60	60.65	2.41	60.67

YPG = Yogic practices Group  
CG = Control Group

The table I shows that the pre and post test means and standard deviation of two groups on selected

bio-chemical variables among obese children.

**Table II.** Analysis of variance of pre test scores on selected bio-chemical variables among obese children

Sl. No	Variables	Source of Variance	Sum of Squares	df	Mean Squares	F-Value
1	Fasting Plasma Glucose	BG	0.10	1	0.10	1.38
		WG	2.02	28	0.07	
2	HDL	BG	1.32	1	1.32	2.80
		WG	13.19	28	0.47	

\*  $P < 0.05$  Table F, df (1,28) (0.05) = 4.19

In table II, the results of analysis of variance of pre test scores on fasting plasma glucose (1.38) and HDL (2.80) were lesser than the table value of 4.19 indicating

that it was not significant for the degrees of freedom (1,28) at 0.05 level of confidence indicating that the random sampling was successful.

**Table III.** Analysis of variance of post test scores on selected bio-chemical variables among obese children

Sl. No	Variables	Source of Variance	Sum of Squares	df	Mean Squares	F-Value
1	Fasting plasma glucose	BG	0.58	1	0.58	12.58*
		WG	1.29	28	0.04	
2	HDL	BG	3.14	1	3.14	10.28*
		WG	8.55	28	0.30	

\*  $P < 0.05$  Table F, df (1,28) (0.05) = 4.19

In table III, the results of analysis of variance of post test scores on fasting plasma glucose (12.58) and HDL (10.28) were greater than the table value of 4.19

indicating that it was significant for the degrees of freedom (1,28) at 0.05 level of confidence.

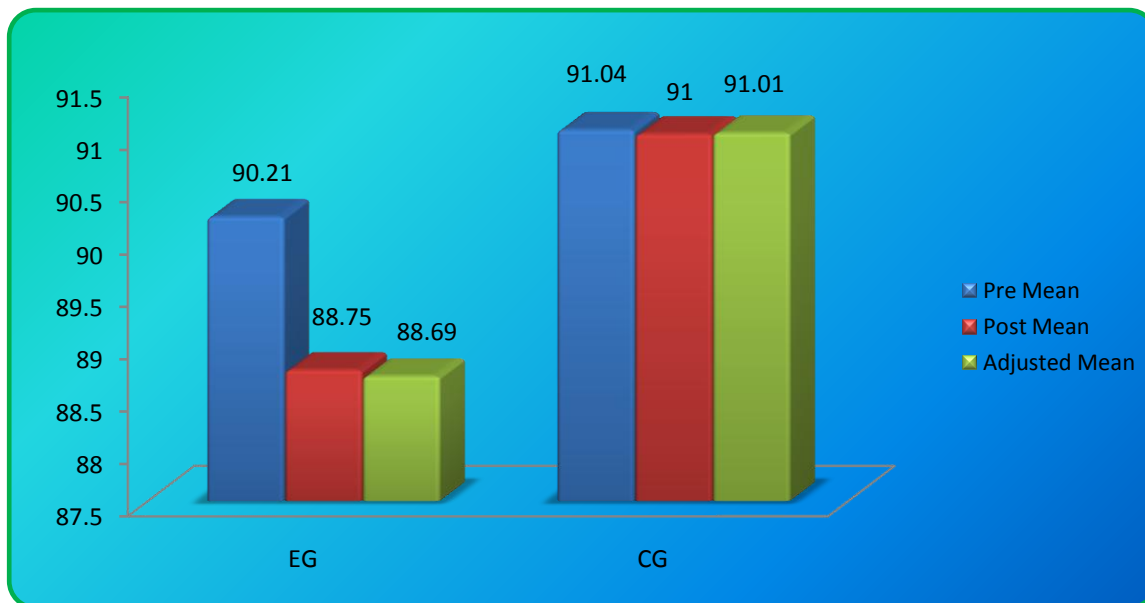
**Table IV.** Analysis of covariance of adjusted post test scores on selected bio-chemical variables among obese children

Sl. No	Variables	Source of Variance	Sum of Squares	df	Mean Squares	F-Value
1	Fasting plasma glucose	BG	0.91	1	0.91	74.45*
		WG	0.33	27	0.01	
2	HDL	BG	6.00	1	6.00	64.54*
		WG	2.51	27	0.09	

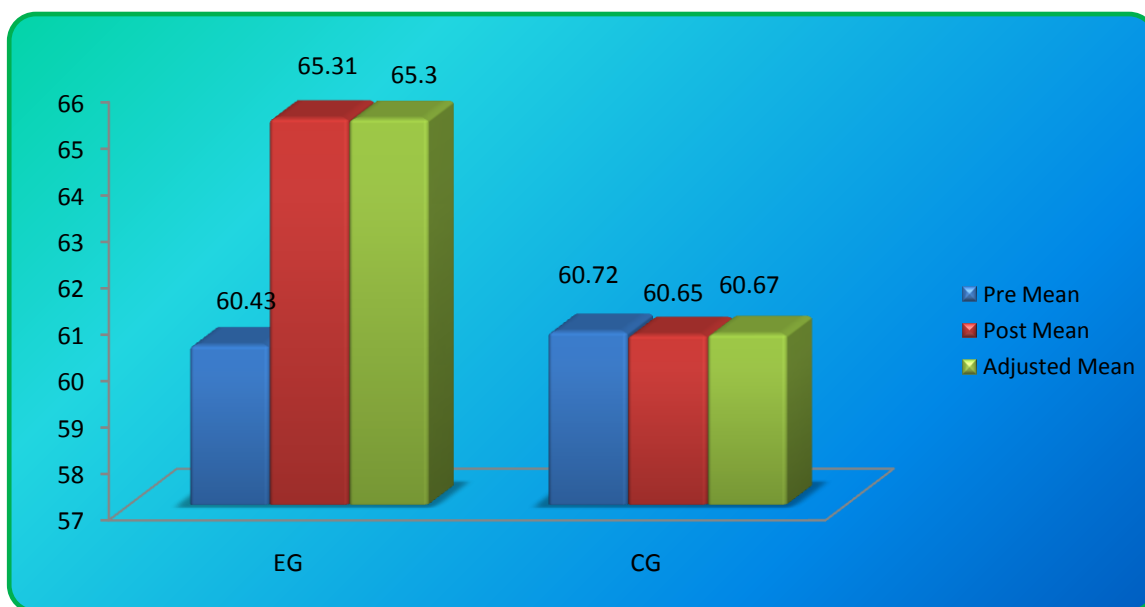
\*  $P < 0.05$  Table F, df (1,28) (0.05) = 4.19

In table IV, the results of analysis of covariance of adjusted post test scores on fasting plasma glucose (74.45) and HDL (64.54) were greater than the table

value of 4.19 indicating that it was significant for the degrees of freedom (1,28) at 0.05 level of confidence.



**Figure I.** Shows the Mean Values of Experimental and Control Groups on fasting plasma glucose among Obese children



**Figure II.** Shows the Mean Values of Experimental and Control Groups on HDL among Obese children

**Conclusions**

In the light of the study undertaken with certain limitations imposed by the experimental conditions, the following conclusions were drawn.

1. The result of the study reveals that there was a significant improvement in the experimental group on selected variables when compared to the control group after the completion of twelve weeks of yogic practices.
2. The yogic practices group has showed better performance on fasting plasma glucose and HDL than the control group.

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