K Govindasamy
Research Scholar,
Department of Physical
Education, TNPESU, Chennai,
Tamil Nadu, India

Dr. Amarpreet Singh
Research Scholar,
Department of Physical
Education, TNPESU, Chennai,
Tamil Nadu, India

Effect of yogic practice on selected biochemical variables among obese middle age school boys

K Govindasamy

Abstract
The present study is an outcome of the effect of yogic practice on selected biochemical variables among obese middle age school boys. To facilitate the study 30 obese school boys, from Chennai. The selected subjects were in the age ranged between 12 to 14 years. They were divided into two equal groups' namely experimental group, and control group, on random basis. Before the commencement of the training, purpose of the study and method of yogic practice were explained to the subjects for their cooperation. The researcher reviewed the various scientific literatures pertaining to effect of yogic practice on selected biochemical variables among obese school boys. The selected biochemical variables are blood glucose (Fasting) and Triglycerides. The study was formulated as a true random group design consisting of a pre-test and posttest. The subjects (N=30) were randomly assigned to three equal groups of fifteen obese school boys. Yogic practice group and control group respectively. Pretest was conducted for all the 30 subjects on selected biochemical variables. The experimental groups participated in respective training for six days per week a period of twelve weeks programme. The control group did not participate in any of the training programme. The post test was conducted on the above said dependent variables after a period of twelve weeks for all the three groups. The differences between initial and final scores were considered as the effect of yogic practice and the obtained data were subjected to statistical treatment using ANCOVA. In all cases the level of significance fixed 0.05 levels.

Keywords: Yogic practice, Blood glucose (Fasting), and Triglycerides

Introduction
Obesity means an excess amount of body fat. The prevalence of obesity is commonly assessed by using body mass index (BMI), defined as the weight in kilograms divided by the square of the height in meters (kg/m2). A BMI over 25 kg/m2 is defined as overweight, and a BMI of over 30 kg/m2 as obese. Obesity has reached epidemic proportions globally, with more than 1 billion adults overweight - at least 300 million of them clinically obese - and is a major contributor to the global burden of chronic disease and disability. Often coexisting in developing countries with under-nutrition, obesity is a complex condition, with serious social and psychological dimensions, affecting virtually all ages and socioeconomic groups. Increased consumption of more energy-dense, nutrient poor foods with high levels of sugar and saturated fats, combined with reduced physical activity, have led to obesity rates that have risen three-fold or more since 1980 in some areas of North America, the United Kingdom, Eastern Europe, the Middle East, the Pacific Islands, Australasia and China. The obesity epidemic is not restricted to industrialized societies; this increase is often faster in developing countries than in the developed world. Obesity and overweight pose a major risk for serious diet-related chronic diseases, including type 2 diabetes, cardiovascular disease, hypertension and stroke, and certain forms of cancer. The health consequences range from increased risk of premature death, to serious chronic conditions that reduce the overall quality of life. Of especial concern is the increasing incidence of child obesity. (www.who.in)

Purpose of the study
The purpose of the study was to find out the effect of yogic practice on selected biochemical

Correspondence
K Govindasamy
Research Scholar,
Department of Physical
Education, TNPESU, Chennai,
Tamil Nadu, India

variables among obese middle age school Boys.

Hypothesis
It was hypothesized that there would be significant difference between Yogic Practices (A) and Control Group (B) on blood glucose (Fasting) and Triglycerides among obese middle age school boys.

Reviews of related literature
Subaash. B & Elangovan. R (2014) [1] The present random group experimental study was designed to find out the effect of simplified kundalini yoga and walking on selected biochemical variables among obese school boys. It was hypothesized that there would be significant differences in biochemical variables such as Triglycerides (BMI of 30 to 35) school boys from Kanchipuram aged between 14 to 18 years were selected randomly. The subjects were divided into two experimental groups and a control group of 15 subjects each in a group. Experimental groups underwent simplified kundalini yoga and walking respectively for the period of 12 weeks, six days per week of one hour basically, then slightly increased to 1.5 hours and 1.30 hours. The control group was not exposed to any specific training. The pre-test and post-test was conducted before and after and after the training for all the groups. The Triglycerides (BMI) was measured by weighing machine and meter scale and resting pulse rate was measured by BP monitor machine. The data collected from the subjects were treated statistically through using Analysis of covariance (ANCOVA) to determine the significant difference. The Hypotheses were tested at 0.05 level of confidence. The results and the conclusions of the study showed that simplified kundalini yoga and walking were effective in decreasing significantly as result of Triglycerides (BMI) and resting pulse rate among obese school boys than the control group and simplified kundalini yoga was effective than walking in decreasing Triglycerides (BMI) and resting pulse rate among school boys.

Duraisami (2012) [2], The Purpose of the present study was to analyze the effect of walking and suryanamaskar on Triglycerides of obese men forty five (N=15) obese man were selected at Pondicherry region. Their age ranged from 40 to 55 years. The subjects were randomly divided into three equal groups, group I walking group II suryanamaskar and group III control each consisting of 15 subjects. Two experimental groups were participated in two different training programmers i.e. walking and suryanamaskar for the duration

of six weeks for five days in a week for five days in a week in the morning hours between 6.00 am to 7.00 am and control group did not participated in any training except their daily routine works. The data collected before and after the training programme. Analysis of Co-variance (ANCOVA) and scheffe's post hoc test were applied to find out the significance of mean difference among the three groups. The results show that the obtained 'F' Ratio value of Triglycerides 4.116 was significantly higher them the table value 3.23 (*P*>0.05). There was a statically significant decrease in Triglycerides for both the groups. The findings of the study indicated that the significant reduction on Triglycerides for the walking groups is better than the suryanamaskar groups. But both the groups have shown beneficial effects when compared to the control group.

Methodology
Selection of subjects
To achieve the purpose of the Random group experimental study, 30Obese School boys from Chennai aged between 12 to 14 years were selected randomly; the subjects were divided into experimental groups of Yogic practices and a control group of 15 subjects each.
Experimental groups underwent Yogic practices respectively for the period of 12 weeks, six days per week of one hour in the evening. The control group was not exposed to any specific training but they participated in their regular activities.
Yogic practices given to the experimental groups which include Yogic practices, Loosening Exercises, Suryanamaskar, Padahastasana, Parvaatasana, Pachimuttasana, Ardhamatsyendrasana, Bhujanagasana, Shalabasana, Sarvangasana, Halasana, Dhanurasana, Nadishodana, Shavasana and Japa Meditation.
The selected variables, Blood glucose (Fasting) and Triglycerides was measured by Skin fold caliper.

Statistical technique
The data collected from the subjects were analyzed using Analysis of Covariance to find out the adjusted mean difference among the treatment groups. The Scheffe's post hoc test was used to find out the paired mean significance at 0.05 levels.

Result and discussion
Results on blood glucose (fasting)

Table 1: Computation of Analysis of Covariance of Experimental Groups and Control Group on Blood Glucose (Fasting) (Scores in Mg/Dl)

	Exp. Group	Control group	Source of Variance	DF	sum of square	mean sum of squares	obtained F ratio
pre test	133.54	134.29	between	2	19.17	9.59	0.45
			Within	28	594.28	21.22	
Post test	128.32	133.46	between	2	222.32	111.16	5.36*
			Within	28	580.17	20.72	
Adj. Post Test	128.30	132.83	between	2	155.89	77.94	10.50*
			Within	27	200.52	7.43	
Mean Diff.	5.21	0.83					

*Signicant at 0.05 level of confidence
Table F-ratio at 0.05 level of confidence with df one and 28(df)=3.34, one and 27(df)=3.34

The obtained F value on pretest scores 0.45 was lesser than the required F value of 3.34 to be significant at 0.05 level. This proved that there was no significant difference between the groups a pretest and posttest and the randomization at the pretest was equal. The post test scores analysis proved that there was significant difference between the groups, as

obtained F value 5.36 was greater than the required F value of 3.34. This proved that the differences between the post test means of subjects were significant. Taking into consideration the pre and post test scores among the groups adjusted mean scores were calculated and subjects were significant. Taking into consideration the pre and post test scores among the

groups adjusted mean scores were calculated and subjected to statistical treatment. The obtained F value of 10.50 was greater than the required F value of 3.34. This proved that there was significant difference among the means due to twelve weeks of yogic Practices on blood glucose (Fasting). The ordered adjusted means on blood glucose were presented through bar diagram for better understanding of the results of this study in Figure-1
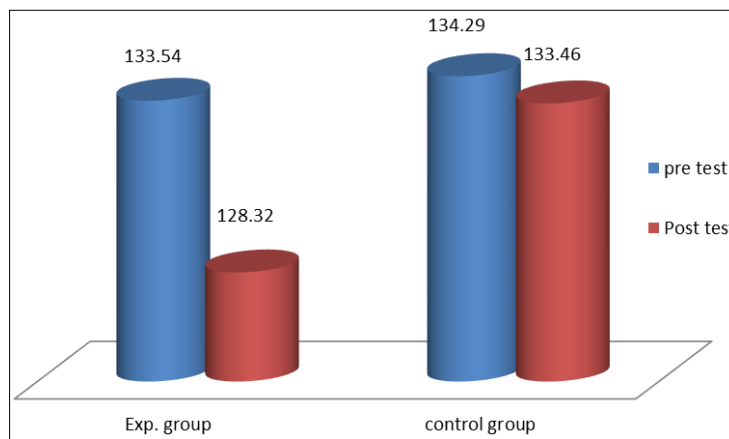

Fig 1: Bar Diagram Showing the Mean Difference among Yogic Practices (Group A) and Control Group (Group B) on Blood glucose (Fasting) (Scores in mg/dl)

Results on triglycerides

Table 2: Computation of Analysis of Covariance of Experimental Groups and Control Group on Triglycerides (Scores in Mg/dl).

	Exp. group	control group	Source of Variance	DF	sum of square	mean sum of squares	obtained F ratio
pretest	159.31	174.38	between	2	1706.53	853.27	8.97
			within	28	2664.34	95.15	
Posttest	153.61	173.98	between	2	3113.04	1556.5	19.24
			within	28	2264.74	80.88	
Adj. Post Test	158.93	168.92	between	2	456.17	228.09	6.16
			within	27	999.20	37.01	
Mean Diff.	5.70	0.41					

*Signicant at 0.05 level of confidence
Table F-ratio at 0.05 level of confidence with df one and 28(df)=3.34,one and 27(df)= 3.34

The obtained F value on pretest scores 8.97 was lesser than the required F value of 3.34 to be significant at 0.05 level. This proved that there was no significant difference between the groups a pretest and posttest and the randomization at the pretest was equal. The post test scores analysis proved that there was significant difference between the groups, as obtained F value 19.24 was greater than the required F value of 3.34. This proved that the differences between the post test means of subjects were significant. Taking into consideration the pre and post test scores among the groups adjusted mean scores were calculated and subjects were significant. Taking into consideration the pre and post test scores among the groups' adjusted mean scores were calculated and subjected to statistical treatment. The obtained F value of 6.16 was greater than the required F value of 3.34. This proved that there was significant difference among the means due to twelve weeks of yogic Practices on Triglycerides

The ordered adjusted means on Triglycerides were presented through bar diagram for better understanding of the results of this study in Figure-2.
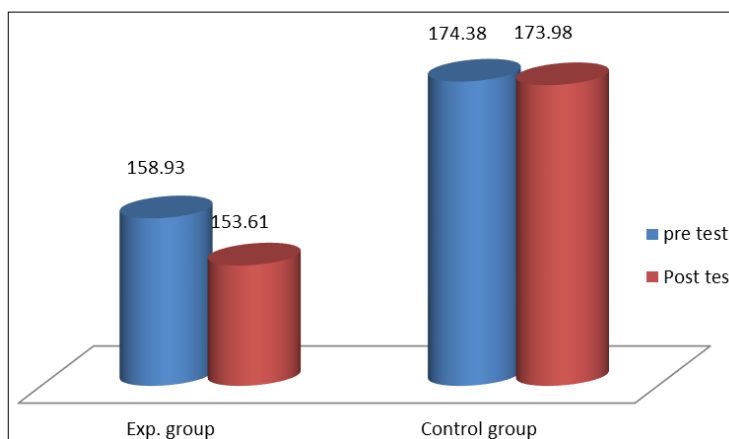

Fig 2: Bar Diagram Showing the Adjusted Post Test Means of Experimental and Control Groups on Triglycerides (Scores in mg/dl).

Conclusions

There was significant decrease in the biochemical variables namely blood glucose (Fasting), and Triglycerides reduced significantly due to yogic practice.

Reference

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