

Effect of Yoga Therapy on Selected Bio-chemical Variables among Obese Women

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Abstract

The purpose of this random group experimental study was to find out the effect of yoga therapy on selected bio-chemical variables among obese women. Thirty (30) obese women residing in Chennai, Tamil Nadu, were selected at random as subjects. The age of the subjects was ranged from 40 to 50 years only. They were divided into two(2) equal groups, each group consisted of fifteen(15) subjects, in which one experimental group and another was control group that did not participate in any special activities apart from their regular active works. The training period for the study was six days(6) (Monday to Saturday) in a week for twelve(12) weeks. Prior and after the experimental period, the subjects were tested on blood glucose, total cholesterol and triglycerides. The independent 't' test was applied to find out the significant difference between the experimental group and control group on selected criterion variables. The result of the study shows that the Yoga therapy decreased the Blood glucose, Total Cholesterol and triglycerides of obese women. It was concluded from the results of the study that Yoga therapy has brought positive changes in blood glucose, total cholesterol and triglycerides as compared to the control group.

Keywords: Yoga therapy, Blood glucose, Total cholesterol, Triglycerides, Obese women.

Introduction

Yoga has an important role to play in the treatment of obesity. Yoga techniques affect body, internal organs, endocrine glands, brain, mind and other factors concerning Body and Mind complex. Yoga techniques can be practiced effectively to reduce the weight and achieve normal healthy condition of Body and Mind.

Yoga positions or postures are especially useful to reduce the fats in various parts, especially forward bending, twisting and backward bending asanas help to reduce the fats near abdomen, hips and other areas. Also the practice of asanas improves functioning of internal organs, strengthening heart, lungs, kidneys, excretory & reproductive organs. Regular practice builds strength in muscles.

Asana can be practiced with fast speed like exercise with good effects the practitioner may increase repetitions instead of maintaining the asana for long.

Children who regularly consume more calories than they use will gain weight. If this is not reversed the child will become obese over time. Consumption of just 100calories (the equivalent of 8 ounces of a soft drink) above daily requirements will typically result in a 10 pounds weight gain over one year. Many different factors contribute to this imbalance between calorie intake and consumption (www.girinathyoga.com).

Body fat percentage is difficult to measure accurately, however. The most accurate methods use special equipment that is not found at most medical offices. The method that measured skin fold thickness is not reliable unless it is done correctly by a trained and experienced technician.

Obesity means an excess amount of body fat. No general agreement exists on the definition of obesity in women. Most professionals use published guidelines based on the body mass index (BMI), or a modified BMI for age, to measure obesity in women. Others define obesity in women as body weight at least 20%, higher than a healthy weight for a child of that height, or a body fat percentage above 25% in boys or above 32% in girls. Although rare in the past, obesity is now among the most widespread medical problems affecting women. Childhood obesity represents one of our greatest health challenges. Obese women are also more likely to be obese as adults, increasing their risk of serious health problems such as heart disease and stroke (www.obesity.com).

More than, 210 crore are obese globally. India is the second most obese country in the world after the U.S. In India, 23.9 crore people are obese. Around 25% of people in Tamil Nadu are Obese. 20.9% of women are obese. 30% of deaths are obese related in the world. Financial loss due to obesity in the world touches \$2 trillion (www.girinathyoga.com).

Purpose of the Study

The purpose of the study was to find out the effect of yoga therapy on selected bio-chemical variables among obese women.

Hypothesis

It was hypothesized that there would be significant improvement in selected Bio-chemical variables such as Blood Glucose, Total Cholesterol and Triglyceride among obese women due to the influences of yoga therapy.

Review of Related Literature

Malarvizhi.V (2009) conducted a study on the effect of Tai chi practices and Yoga therapy to find the changes on health related fitness and respiratory parameters among obese women. The subjects of sixty obese

women were randomly chosen from the Curves fitness studio, Chennai and were divided into four groups, group I was given training in Tai chi, group II was given Yoga therapy, group III was given both Tai chi and Yoga therapy for 6 weeks and group IV was the control group for which no training was given the variables tested were cardio respiratory endurance, body mass index, health related respiratory parameters, breath holding time and vital capacity at 0.05 level of confidence. The statistical technique of ANCOVA was used and found that there was better significant improvement in the group III due to Tai chi and yoga training when compared to other three groups. And also found that there was no significant difference between Tai chi training group and Yoga therapy groups but found that there was significant improvement when compared with control group.

MandakiniPansare (2003) conducted study on effect of yoga on physical fitness. The study with health working ladies of Bharati Vidyapeeth's Deemed University Medical College, of average age of 30 years. They were not engaged in any kind of practice earlier. After a clinical history, a through clinical examination was done and they were subjected to physical fitness tests, muscle strength, cardiac efficiency test, flexibility, fat content and respiratory efficiency tests. The subjects were given Yoga therapy for two months, 5 days a week and 45 min/day. After training period all the tests were repeated. The results were compared by paired tests the results showed highly significant improvement in pulmonary function tests, cardiac efficiency and flexibility was significantly increased and there was significant reduction in body fat content. The muscle strength did not show any significant change. The result were compared with the findings of other workers and discussed.

Methodology

For the purpose of this random group experimental study, thirty obese women in Chennai, Tamil Nadu, were selected at random as subjects based on their Blood Glucose, Total Cholesterol and Triglyceride and their age was ranged from 40 to 50 years. Yoga therapy was given six days (Monday to Saturday) per week for twelve weeks. All the subjects were randomly assigned to experimental group and control group each consists of 15 subjects.

Yoga therapy was given to experimental group and control group was not given any kind of yoga therapy. Uttanapadsana Ardha Halasana Single Leg and without hand pressing and Trikonasana Initial Stage and I, II and III Stages for Yoga therapy. Initially pre-test was taken and after the experimental period of twelve weeks, post-test was taken from all the two groups. The differences between initial and final scores on selected biochemical variables namely blood glucose, total cholesterol and triglycerides were considered as the effect of yoga therapy on selected subjects. The mean

differences were tested for significance using independent 't' test at 0.05 level of confidence.

Analysis of Data

The test statistically was used for 't' test. The level of significance was fixed at 0.05 level of confidence.

Results on Blood Glucose

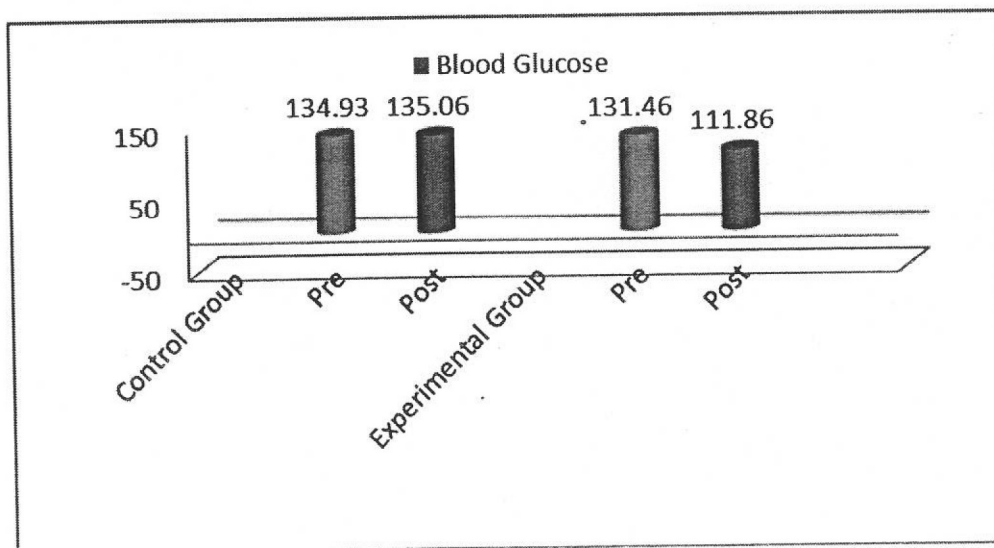
Table- I
Mean, Standard Deviation, Standard Error and 't' ratio on Blood Glucose Among Obese Women

Variables	Groups		No. of subjects	Mean	Std. deviation	Standard error mean	't' ratio
Blood Glucose	Control Group	Pre	15	134.93	5.02	1.29	0.078
		Post	15	135.07	4.17	1.07	
	Experimental Group	Pre	15	131.47	5.49	1.41	9.621
		Post	15	111.87	5.32	1.37	

*significant at 0.05 level of confidence, table 't' ratio=2.69

From the analysis of data it was proved that there was significant difference between control group and experimental group in blood glucose as the calculated 't' value 9.621 were greater than the required 't' value of 2.69 and that there was a significant difference between control group and experimental group in blood glucose among obese women.

Figure- 1
The Bar Diagram showing the Mean Values of Blood Glucose among Obese Women



Results on Total Cholesterol

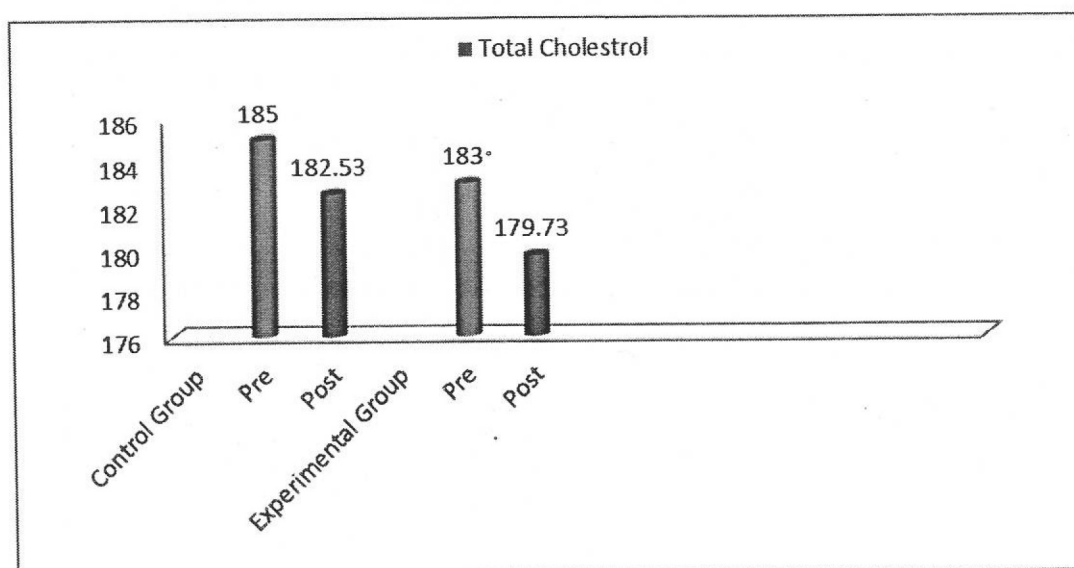
Table- II
Mean, Standard Deviation, Standard Error and 't' ratio on Total Cholesterol Among Obese Women

Variables	Groups		No. of subjects	Mean	Std. deviation	Standard error mean	't' ratio
Total Cholesterol	Control Group	Pre	15	185	3.295	0.85	2.434
		Post	15	182.53	2.231	0.57	
	Experimental Group	Pre	15	183.93	3.514	0.90	3.547
		Post	15	179.73	3.411	0.88	

*significant at 0.05 level of confidence, table 't' ratio=2.69

From the analysis of data it was proved that there was significant difference between control group and experimental group in total cholesterol as the calculated 't' value 3.547 were greater than the required 't' value of 2.69 and that there was a significant difference between control group and experimental group in total cholesterol among obese women.

Figure- 2
The Bar Diagram showing the Mean Values of Total Cholesterol among Obese Women



Results on Triglycerides

Table- III
Mean, Standard Deviation, Standard Error and 't' ratio on Triglycerides

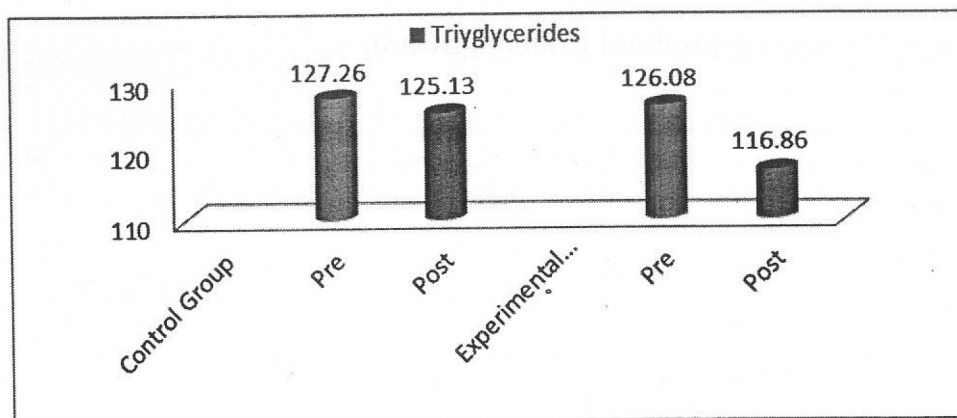
Variables	Groups		No. of subjects	Mean	Std. deviation	Standard error mean	't' ratio
Triglycerides	Control Group	Pre	15	127.26	6.818	1.76	1.09
		Post	15	125.13	5.792	1.49	
	Experimental Group	Pre	15	126.8	5.634	1.45	6.3
		Post	15	116.86	4.580	1.18	

Among Obese Women

*significant at 0.05 level of confidence, table 't' ratio=2.69

From the analysis of data it was proved that there was significant difference between control group and experimental group in triglycerides as the calculated 't' value 6.3 were greater than the required 't' value of 2.69 and that there was a significant difference between control group and experimental group in total triglycerides among obese women.

Figure- 3
The Bar Diagram showing the Mean Values of triglycerides among Obese Women



Conclusions

Within the limitations and delimitations set for the present study and considering the results obtained, the following conclusions were drawn.

1. There was a significant difference between biochemical variables such as blood glucose, total cholesterol and triglyceride when compared to yoga therapy training group and control group among obese women.
2. Blood Glucose of the obese women was significantly decreased due to the influence of twelve week training of yoga therapy when compared to control group.
3. Total Cholesterol of the obese women was significantly decreased due to influence of twelve week training of yoga therapy when compared to control group.
4. Triglycerides of the obese women were significantly decreased due to influence of twelve week training of yoga therapy when compared to control group.

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