



ISSN: 2456-4419

Impact Factor: (RJIF): 5.18

Yoga 2019; 4(1): 535-543

© 2019 Yoga

www.theyogicjournal.com

Received: 04-11-2018

Accepted: 07-12-2018

Tasleem Arif Sheikh

Research scholar sir Satya Sai
University of technology &
medical science, Sehore, Madhya
Pradesh, India

Effect of Yogasanas practice on obesity of school going girl students in Jammu region

Tasleem Arif Sheikh

Abstract

The main purpose of the research is to know increasing no of obesity in children due to bad eating life style the age group was. 8-16 years. The subjects were selected by simple random sampling method 40 subjects (girls) were selected for this study and equally divided in to two groups. To determine the significant difference in the means of Total Skin Fold, Percentage of Fat Weight, Lean Body Weight and Body Mass Index of girl students between the two groups as well as between the pre-test and posttest means of experimental and control group t-test was employed for analyses of obtained data

Keywords: Obesity, Yogasanas

1 Introduction

The purpose of the present study would be to find out the effect of yogasanas on obesity of school students. One emerges refreshed and rejuvenated after a Yoga session. Yoga also helps in releasing tensions generated from repetitive mundane activities that make daily tasks unbearable. The suppleness and flexibility of the body can be regained and restored with regular practice of Yoga. Now a day's yoga is becoming more and more popular. It attracts the attention of the whole world. Towards of people both men and women, who are aware of the importance of personal growing has adopted yoga as a part of their life. Gradually, yoga is becoming a life style, almost fashion of the modern world. People adopted yoga as a tool to keep the body and mind fit, to cure diseases by improving the functions of vital organs of the body. Yoga is practiced for peace of mind and also to improve beauty. Yogasana became a term for various postures useful for restoring and maintain a practitioner's well-being and improve the body's flexibility and vitality, with the goal to cultivate the ability to remain in seated meditation for extended periods. Asanas are widely known as "Yoga postures" or "Yoga positions" Obesity It is a medical condition in which excess body fat has accumulated to the extent that it may have an adverse effect on health, leading to reduced life expectancy and/or increased health problems. Obesity is also called as body mass index (BMI).The escalation of obese children is due to the upsurge of technology, increase in snacks and portion size of meals, and the decrease in the physical activity of children. If children were more mobile and less sedentary, the rate of obesity would decrease. Children have to put down the electronic devices and spend more time outside playing or exploring other options of physical activity. Childhood obesity is a condition where excess body fat negatively affects a child's health or wellbeing. As methods to determine body fat directly are difficult, the diagnosis of obesity is often based on BMI. Due to the rising prevalence of obesity in children and its many adverse health effects it is being recognized as a serious public health concern. The term overweight rather than obese is often used in children as it is less stigmatizing. In order to prevent or reverse obesity in children it is necessary to perform population wide reassessment of the calorie intake as well as activity recommendation due to the sedentary lifestyle of children nowadays.

Correspondence

Tasleem Arif Sheikh

Research scholar sir Satya Sai
University of technology &
medical science, Sehore, Madhya
Pradesh, India

1.1 Statement of the Problem

The research scholar selected this problem because of fast life style and hostelling may result increasing obesity in school students and increasing obesity means there are more cha

school going students. So the researcher selects this problem for research. The present study is stated as "Effect of Yogasanas Practice on Obesity of School Going Girl Students in Jammu region"

2 Methodology

In this chapter the measurement of the tools used for the collection of data and the procedure adopted to gather the necessary information and interpret it have been described.

2.1. Source of the Data: Source of the data was girl school students of Jammu region.

2.2. Selection of the Subject: The researcher selected the 40 girl school students of Jammu region. The age of the subjects ranged between 12 to 18 years.

2.3. Sampling Procedure: The subjects were selected by using simple random sampling method.

2.4. Formation of Groups: The researcher divided the 40 girl school students into two equal groups on the basis of the mean performance of pre-test score. The groups were equated and distributed into two homogeneous groups namely.

1) Experimental Group

2) Control Group

2.5. Selection of Tests and Criterion Measures

2.6. Body Mass Index (BMI)

2.7. Fat Percentage

2.8. Administration of Test

2.9. Body Mass Index

2.10. Weight- Total body weight was recorded in Kilogram by using standard weighing machine.

2.11. Height- Height was recorded in centimeters by using Wall scale.

$$\text{Body Mass Index (BMI)} = \frac{\text{Body Weight (Kg)}}{(\text{Standard Height in Meter})^2}$$

2.12) Percentage of Body Fat

Equipment: Skin folds Caliper

Measurement Description: To obtain the percentage of fat for each subject skin fold thickness measurements in millimeters was to be taken of selected four sites of body, namely Biceps, Triceps, Sub scapular and Suprailiac, Procedure of taking measurements is described as under.

1) Biceps Skin folds

Procedure: Biceps skin fold thickness was measured as the thickness of a vertical fold raised on the anterior aspects of the arm. Over the belly of the biceps muscle. The skin fold was raised superior to the line marked for the measurement of biceps skin fold thickness and arm circumference, on a

vertical line joining the anterior border of the aeration and the center of the antecubital fossa. The subject stand facing measure, with the upper extremely relaxed at the side, and the plan directed entirely. The caliper jaws were applied at the marked level thickness of the skin fold was recorded to the nearest 0.1cm.

2. Triceps Skin folds

Procedure: The Triceps skin fold was measured in the midline of the posterior aspect of the arm, over the triceps muscle. The subject stood with the arm by the side and the elbow extended but in relaxed position. A double layer of the skin and subcutaneous tissue was grasped with the thumb and fore finger of the left hand and over the triceps muscle on the back of the right upper arm, half way between the acromion and the elbow where the skin fold runs parallel to the long axis of the arm. The skin fold caliper was gently placed to grasp the skin without removing the finger, and the thickness of the skin was recorded from the indicator needle of the dial. It will be measured to the nearest 0.1 cm.

3. Sub scapular Skin fold

Procedure - The skin fold thickness of the sub scapular was measured with the help of skin fold caliper. The subject stood with the shoulder erect but relaxed, keeping the arm by the sides. A double layer of skin and subcutaneous tissue were grasped with the thumb and fore finger of the left hand lateral to interior angle of right scapula. Where the skin fold runs downward and outward in the direction of the ribs. The skin fold caliper was placed gently to grasp the skin with out removing the finger. The thickness of skin was recorded from the indicator needle of the dial. It will be measured to the nearest 0.1 cm.

4. Superalliac Skin fold

Procedure: The superalliac skinfold was measured in the midaxillary line immediately superior to the pliace crest. The subject stands with feet together and in an erect position. The arms hand by the sides of, if necessary. They can be adjusted slightly to more across the side. They are unable to stand; the measurement can be made with the subject supine. An oblique skin fold was grasped first posterior to the midaxillary line following the natural oliveage lines of the skin. It was aligned at 45° to the horizontal. The caliper jaws are applied 1 cm. from the finger holding the skin fold, and the thickness will be recorded to the nearest 0.1 cm.

2.13. Training Programme

Researcher arranged the yogasanas programme on the morning only. This training programme was of 6 weeks only and 6 days a week and on Sunday totally rest.

6 Weeks Training Programme

Week	Day	Asana	Duration Minutes		Total Volume
I & II Week	Monday to Friday	1) Pawanmuktasana	2	After Every Asana 1 min Shavasana	Approx. 40 Min
		2) Naukasana	2		
		3) Bhujagrasna	2		
		4) Dhanurasana	2		
		5) Viprit Kirni	2		
		6) Halasana	2		
III & IV Week	Monday to Friday	1) Pawanmuktasana	3		Approx. 1 Hr
		2) Naukasana	2		
		3) Bhujagrasna	3		
		4) Dhanurasana	2		
		5) Viprit Kirni	2		
		6) Halasana	3		

V & VI Week	Monday to Friday	1) Pawanmuktasana	3 3 3 3 3 3		Approx. 1.20 Hr
		2) Naukasana			
		3) Bhujagasna			
		4) Dhanurasana			
		5) Viprit Kirni			
		6) Halasana			

Every day before start the training programme 5 min Prathana and 10 min warm-up exercises like neck rotation, hand & leg rotation, trunk rotation etc.

2.14. Collection of Data

The data was collected after the administrating the test on the girl school students of Jammu region. After collection of data the statistically analyzed and arranged in the tables in chapter 3.

3 Analysis and Interpretation of Data

The researcher conducted a study on effect of yogasanas practice on obesity of school going students. For the purpose of this study the researcher collected data on 40 school girls from Jammu region.

3.1. Analysis of Data

To determine the significant difference in the means of Total Skin Fold, Percentage of Fat Weight, Lean Body Weight and Body Mass Index of girl students between the two groups as well as between the pre-test and posttest means of experimental and control group t-test was employed.

3.2) Level of Significance

To find out the significance difference, level of significance was set at 0.05 level of confidence.

Findings of the statistical analysis have been shown in the following tables.

Table 1: Summary of Mean, Standard Deviation and t -ratio for the Data on Total Skin Fold of School Girls between the Means of Pre and Post-tests of Control Group

Test	Mean	Standard Deviation	Mean Difference	Standard Error	t-ratio
Pre-test	23.908	4.924			
Post-test	23.932	4.789	0.240	1.536	0.016@

@ Not significant at 0.05 level Tabulated $t_{0.05(19)} = 2.093$

The above Table 1 reveal that, Total Skin Fold of School girls mean difference between the pre-test and post-test of control group is not significant, because the calculated t-value of 0.016 is less than the tabulated t-value of 2.093 at 0.05 level of confidence of 19 degree of freedom.

Total Skin Fold of School girls means between the Pre and Post-tests of Control group was graphically shown in figure 1.

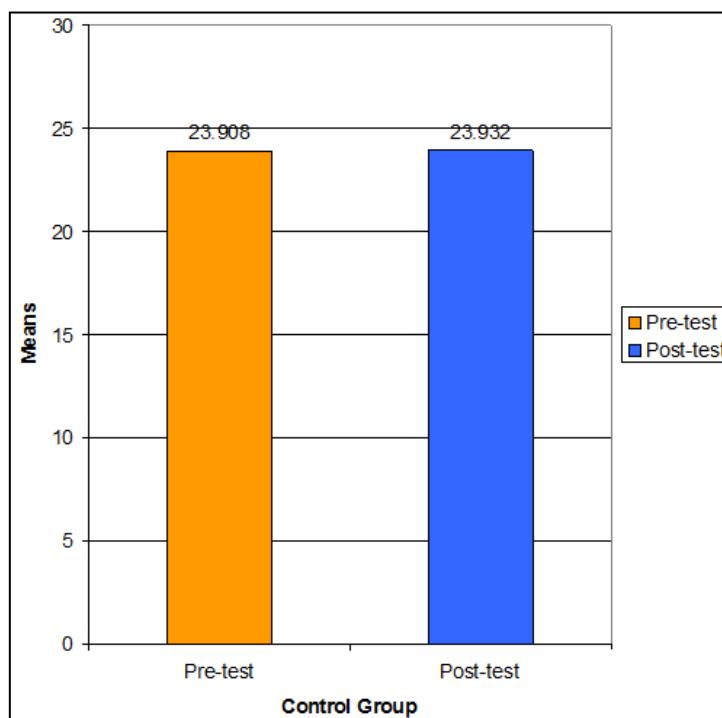


Fig 1: Showing Mean Difference for the Data on Total Skin Fold of School girls Between the Means of Pre and Post-tests of Control Group

Table 2: Summary of Mean, Standard Deviation and t -ratio for the Data on Percentage of Fat Weight of School Girls between the Means of Pre and Post-tests of Control Group

The above Table 2 show that, Percentage of Fat Weight of School girls mean difference between the pre-test and post-test of control group is not significant, because the calculated t-value of 0.033 is less than the tabulated t-value of 2.093 at 0.05 level of confidence of 19 degree of freedom.

Percentage of Fat Weight of School girls means between the Pre and Post-tests of Control group was graphically shown in figure - 2.

Test	Mean	Standard Deviation	Mean Difference	Standard Error	t-ratio
Pre-test	8.380	2.181			
Post-test	8.358	2.135	0.022	0.682	0.033@

@ Not significant at 0.05 level Tabulated $t_{0.05(19)} = 2.093$

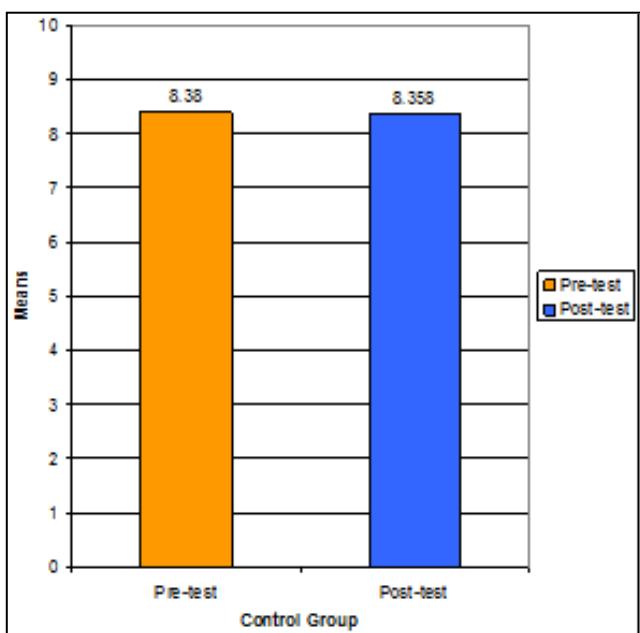


Fig 2: Showing Mean Difference for the Data on Percentage of Fat Weight of School girls Between the Means of Pre and Post-tests of Control Group

Table 3: Summary of Mean, Standard Deviation and t -ratio for the Data on Lean Body Weight of School Girls between the Means of Pre and Post-tests of Control Group

Test	Mean	Standard Deviation	Mean Difference	Standard Error	t-ratio
Pre-test	37.120	3.772			
Post-test	37.142	3.819	0.022	1.200	0.019@

@ Not significant at 0.05 level Tabulated $t_{0.05(19)} = 2.093$

The above Table 3 reveal that, Lean Body Weight of School girls mean difference between the pre-test and post-test of control group is not significant, because the calculated t-value of 0.019 is less than the tabulated t-value of 2.093 at 0.05 level of confidence of 19 degree of freedom. Lean Body Weight of School girls means between the Pre and Post-tests of Control group was graphically shown in figure - 3.

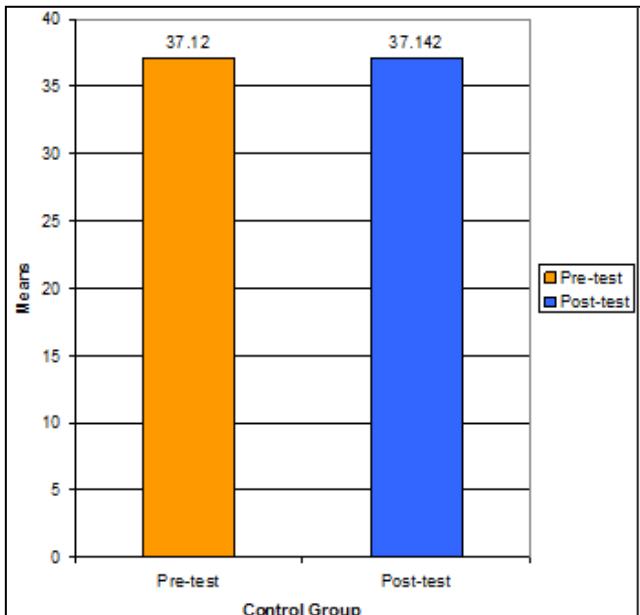


Fig 3: Showing Mean Difference for the Data on Lean Body Weight of School girls Between the Means of Pre and Post-tests of Control Group

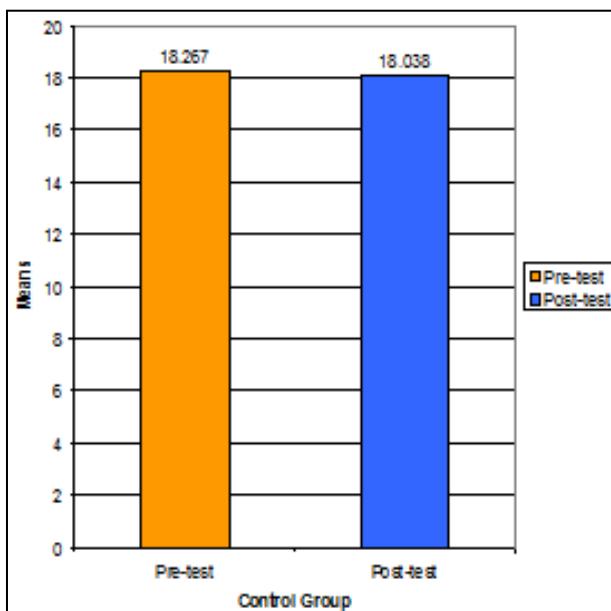
Table 4: Summary of Mean, Standard Deviation and t -ratio for the Data on Body Mass Index of School Girls between the Means of Pre and Post-tests of Control Group

Test	Mean	Standard Deviation	Mean Difference	Standard Error	t-ratio
Pre-test	18.267	2.242			
Post-test	18.038	2.212	0.229	0.704	0.326@

@ Not significant at 0.05 level Tabulated $t_{0.05(19)} = 2.093$

The above Table 4 show that, Body Mass Index of School girls mean difference between the pre-test and post-test of control group is not significant, because the calculated t-value of 0.326 is less than the tabulated t-value of 2.093 at 0.05 level of confidence of 19 degree of freedom.

Body Mass Index of School girl's means between the Pre and Post-tests of Control group was graphically shown in figure 4.

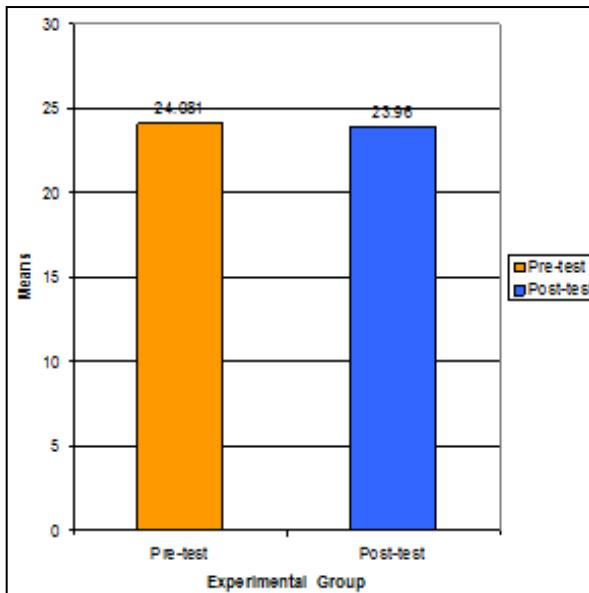
**Fig 4:** Showing Mean Difference for the Data on Body Mass Index of School girls Between the Means of Pre and Post-tests of Control Group**Table 5:** Summary of Mean, Standard Deviation and t -ratio for the Data on Total Skin Fold of School Girls between the Means of Pre and Post-tests of Experimental Group

Test	Mean	Standard Deviation	Mean Difference	Standard Error	t-ratio
Pre-test	24.081	3.840			
Post-test	23.960	3.730	0.121	1.197	0.101@

@ Not significant at 0.05 level Tabulated $t_{0.05(19)} = 2.093$

The above Table 5 reveal that, Total Skin Fold of School girls mean difference between the pre-test and post-test of Experimental group is not significant, because the calculated t-value of 0.101 is less than the tabulated t-value of 2.093 at 0.05 level of confidence of 19 degree of freedom.

Total Skin Fold of School girls means between the Pre and Post-tests of Experimental group was graphically shown in figure - 5.

**Fig 5:** Showing Mean Difference for the Data on Total Skin Fold of School girls Between the Means of Pre and Post-tests of Experimental Group**Table 6:** Summary of Mean, Standard Deviation and t -ratio for the Data on Percentage of Fat Weight of School Girls between the Means of Pre and Post-tests of Experimental Group

Test	Mean	Standard Deviation	Mean Difference	Standard Error	t-ratio
Pre-test	8.513	1.947			
Post-test	8.503	1.881	0.010	0.605	0.016@

@ Not significant at 0.05 level Tabulated $t_{0.05(19)} = 2.093$

The above Table 6 show that, Percentage of Fat Weight of School girls mean difference between the pre-test and post-test of Experimental group is not significant, because the calculated t-value of 0.016 is less than the tabulated t-value of 2.093 at 0.05 level of confidence of 19 degree of freedom.

Percentage of Fat Weight of School girls means between the Pre and Post-tests of Experimental group was graphically shown in figure - 6.

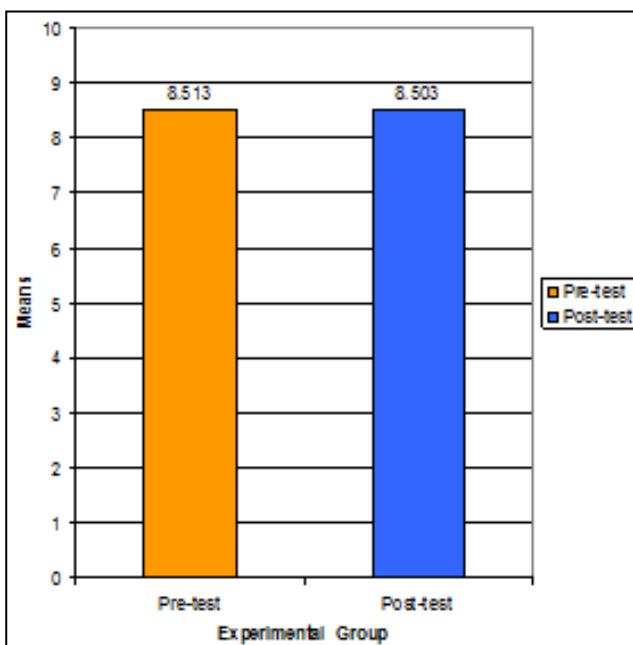


Fig 6: Showing Mean Difference for the Data on Percentage of Fat Weight of School girls Between the Means of Pre and Post-tests of Experimental Group

Table 7: Summary of Mean, Standard Deviation and t -ratio for the Data on Lean Body Weight of School Girls between the Means of Pre and Post-tests of Experimental Group

Test	Mean	Standard Deviation	Mean Difference	Standard Error	t-ratio
Pre-test	37.637	3.845			
Post-test	37.547	3.557	0.090	1.171	0.077@

@ Not significant at 0.05 level Tabulated $t_{0.05(19)} = 2.093$

The above Table 7 reveal that, Lean Body Weight of School girls mean difference between the pre-test and post-test of Experimental group is not significant, because the calculated t-value of 0.077 is less than the tabulated t-value of 2.093 at 0.05 level of confidence of 19 degree of freedom.

Lean Body Weight of School girls means between the Pre and Post-tests of Experimental group was graphically shown in figure – 7

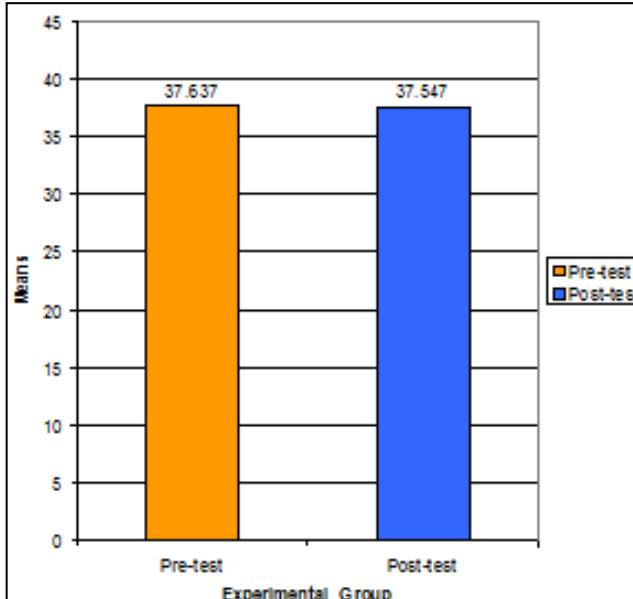


Fig 7: Showing Mean Difference for the Data on Lean Body Weight of School girls Between the Means of Pre and Post-tests of Experimental Group

Table 8: Summary of Mean, Standard Deviation and t -ratio for the Data on Body Mass Index of School Girls Between the Means of Pre and Post-tests of Experimental Group

Test	Mean	Standard Deviation	Mean Difference	Standard Error	t-ratio
Pre-test	18.809	1.665			
Post-test	18.775	1.550	0.034	0.509	0.068@

@ Not significant at 0.05 level Tabulated $t_{0.05(19)} = 2.093$

The above Table 8 show that, Body Mass Index of School girls mean difference between the pre-test and post-test of Experimental group is not significant, because the calculated t-value of 0.068 is less than the tabulated t-value of 2.093 at 0.05 level of confidence of 19 degree of freedom.

Body Mass Index of School girl's means between the Pre and Post-tests of Experimental group was graphically shown in figure - 8.

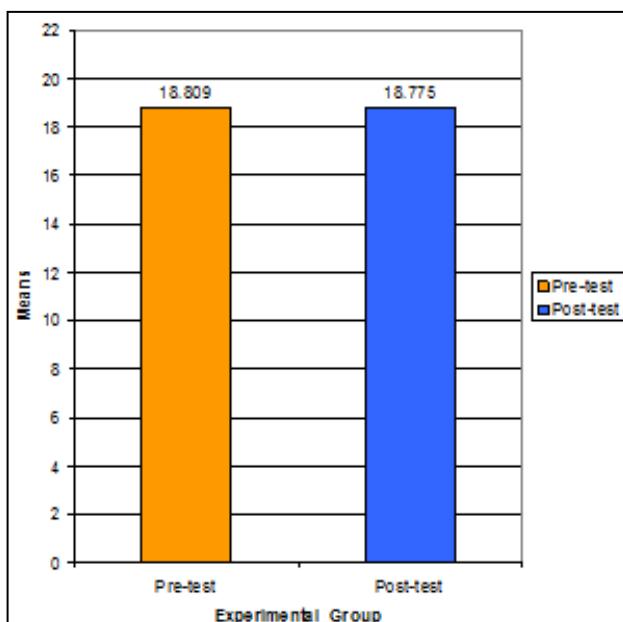


Fig 8: Showing Mean Difference for the Data on Body Mass Index of School girls Between the Means of Pre and Post-tests of Experimental Group

Table 9: Summary of Mean, Standard Deviation and t -ratio for the Data on Total Skin Fold of School Girls between the Means of Post-tests of Control and Experimental Group

Groups	Mean	Standard Deviation	Mean Difference	Standard Error	t-ratio
Control	23.932	4.789			
Experimental	23.960	3.730	0.028	1.357	0.020@

@ Not significant at 0.05 level Tabulated $t_{0.05(38)} = 2.024$

The above Table 9 reveal that, Total Skin Fold of School girls mean difference between the post-test of Control and Experimental group is not significant, because the calculated t-value of 0.020 is less than the tabulated t-value of 2.024 at 0.05 level of confidence of 38 degree of freedom.

Total Skin Fold of School girls means between the Post-tests of Control and Experimental group was graphically shown in figure - 5.

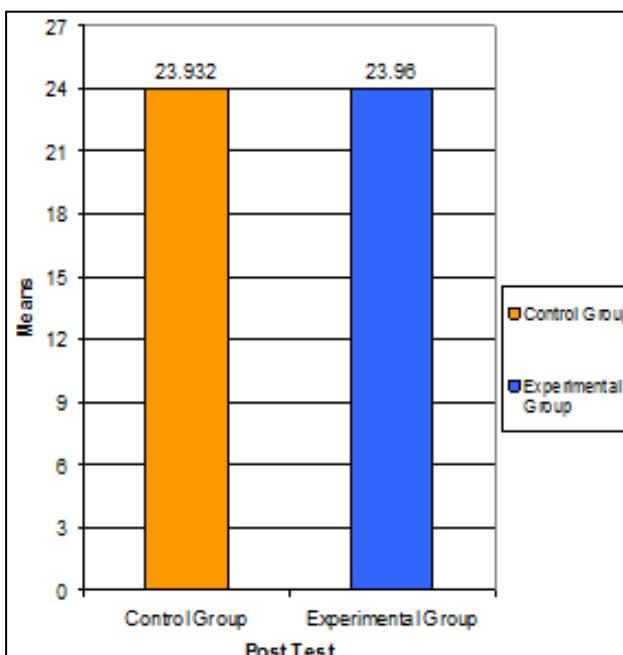


Fig 9: Showing Mean Difference for the Data on Total Skin Fold of School girls Between the Means of Post-tests of Control and Experimental Group

Table 10: Summary of Mean, Standard Deviation and t -ratio for the Data on Percentage of Fat Weight of School Girls between the Means of Post-tests of Control and Experimental Group

Groups	Mean	Standard Deviation	Mean Difference	Standard Error	t-ratio
Control	8.358	2.135			
Experimental	8.503	1.881	0.145	0.636	0.229@

@ Not significant at 0.05 level Tabulated $t_{0.05(38)} = 2.024$

The above Table 10 show that, Percentage of Fat Weight of School girls mean difference between the post-test of Control and Experimental group is not significant, because the calculated t-value of 0.229 is less than the tabulated t-value of 2.024 at 0.05 level of confidence of 38 degree of freedom.

Percentage of Fat Weight of School girls means between the Post-tests of Control and Experimental group was graphically shown in figure - 10.

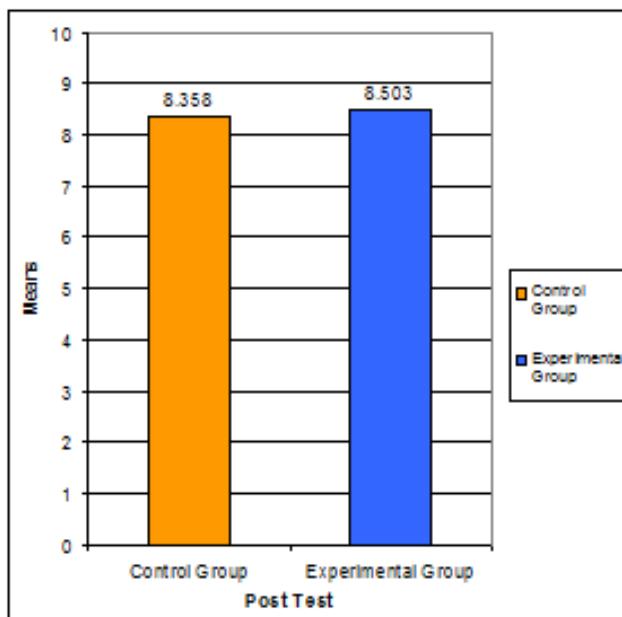


Fig 10: Showing Mean Difference for the Data on Percentage of Fat Weight of School girls Between the Means of Post-tests Control and of Experimental Group

Table 11: Summary of Mean, Standard Deviation and t -ratio for the Data on Lean Body Weight of School Girls Between the Means of Post-tests of Control and Experimental Group

Groups	Mean	Standard Deviation	Mean Difference	Standard Error	t-ratio
Control	37.147	3.819			
Experimental	37.547	3.557	0.400	0.682	0.033@

@ Not significant at 0.05 level Tabulated $t_{0.05(38)} = 2.024$

The above Table 7 reveal that, Lean Body Weight of School girls mean difference between the post-test of Control and Experimental group is not significant, because the calculated t-value of 0.033 is less than the tabulated t-value of 2.024 at 0.05 level of confidence of 38 degree of freedom.

Lean Body Weight of School girls means between the Post-tests of Control and Experimental group was graphically shown in figure - 11.

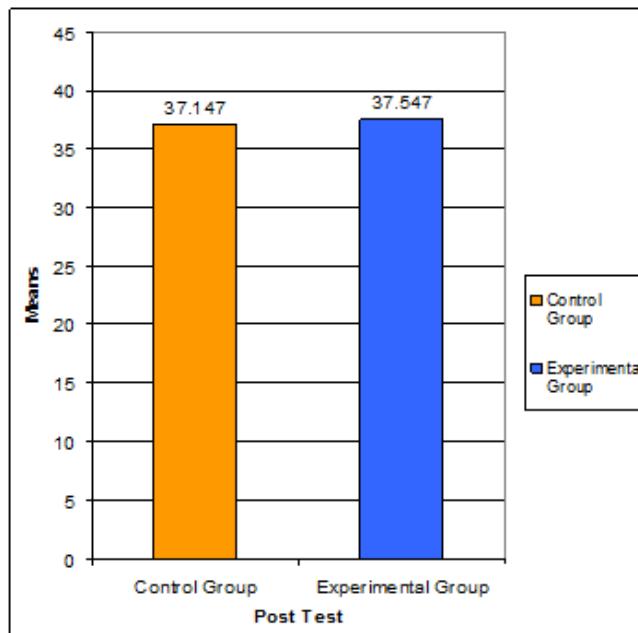


Fig 11: Showing Mean Difference for the Data on Lean Body Weight of School girls Between the Means of Post-tests Control and of Experimental Group

Table 12: Summary of Mean, Standard Deviation and t -ratio for the Data on Body Mass Index of School Girls Between the Means of Post-tests of Control and Experimental Group

Groups	Mean	Standard Deviation	Mean Difference	Standard Error	t-ratio
Control	18.038	2.212			
Experimental	18.775	1.550	0.737	0.604	1.221@

@ Not significant at 0.05 level Tabulated $t_{0.05(38)} = 2.024$

The above Table 12 show that, Body Mass Index of School girls mean difference between the post-test of Control and Experimental group is not significant, because the calculated t-value of 1.221 is less than the tabulated t-value of 2.024 at 0.05 level of confidence of 38 degree of freedom.

Body Mass Index of School girl's means between the Post-tests of Control and Experimental group was graphically shown in figure - 12.

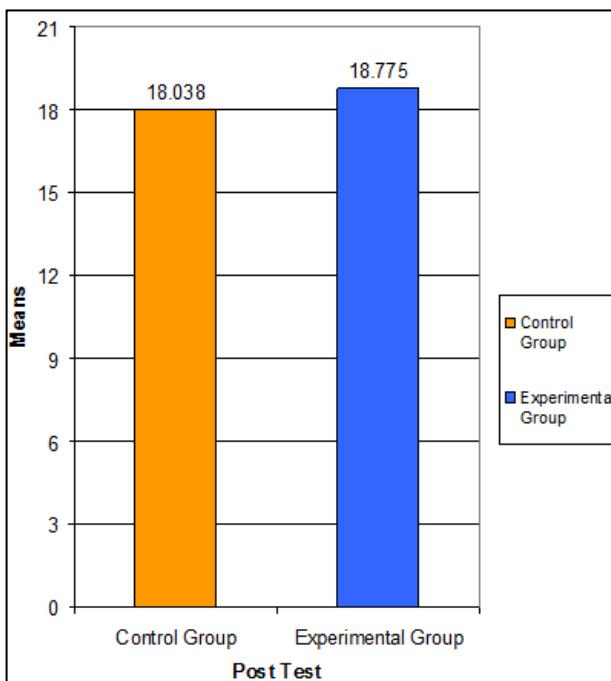


Fig 12: Showing Mean Difference for the Data on Body Mass Index of School girls Between the Means of Post-tests of Control and Experimental Group

4 Findings

From the above tables researcher observed findings are-

- Insignificant difference found between pre and post test of Control group in Total Skin Fold ($t = 0.016$), Percentage of Fat Weight ($t = 0.033$), Lean Body Weight ($t = 0.019$) and Body Mass Index ($t = 0.326$) are less than the tabulated t-value of 2.093 at 0.05 level of confidence of 19 degree of freedom.
- Also insignificant difference observed between pre and post test of Experimental group in Total Skin Fold ($t = 0.101$), Percentage of Fat Weight ($t = 0.016$), Lean Body Weight ($t = 0.077$) and Body Mass Index ($t = 0.068$) are less than the tabulated t-value of 2.093 at 0.05 level of confidence of 19 degree of freedom.
- Insignificant difference examined between post test of Control and Experimental group in Total Skin Fold ($t = 0.020$), Percentage of Fat Weight ($t = 0.229$), Lean Body Weight ($t = 0.033$) and Body Mass Index ($t = 0.1.221$) are less than the tabulated t-value of 2.024 at 0.05 level of confidence of 38 degree of freedom.

4.1 Conclusion

On the basis of findings researcher concluded as-

- Insignificant difference found between pre and post test of Control group in Total Skin Fold, Percentage of Fat Weight, Lean Body Weight and Body Mass Index, because the no training provided to control group
- Also insignificant difference observed between pre and post test of Experimental group in Total Skin Fold, Percentage of Fat Weight, Lean Body Weight and Body Mass Index because the yogasana training was not more effective on the obesity.
- Insignificant difference examined between post test of Control and Experimental group in Total Skin Fold, Percentage of Fat Weight, Lean Body Weight and Body Mass Index.

5 References

1. Vasant G Rele. The Mysterious Kundalini (Bombay: DB. Taraporevala Sons and Company, Private Ltd, 1960, 2.

2. Kuvalyanand Swami, Raj Yoga (Calcutta; Swami Ananyananda), 1982, 19.
3. Haslam DW, James WP. Obesity. Lancet. 2005; 366(9492):1197–209. DOI:10.1016/S0140-6736(05)67483-1. PMID 16198769
4. Kushner Robert. Treatment of the Obese Patient (Contemporary Endocrinology) Totowa, NJ: Humana Press, 2007, 158. ISBN 1-59745-400-1. Retrieved April 5, 2009.
5. Barness LA, Opitz JM, Gilbert-Barness E, Obesity genetic, molecular, and environmental aspects". Am J. Med Genet. 2007; 143(24):3016–34. PMID 18000969.
6. Kopelman Peter G. Clinical obesity in adults and children: In Adults and Children. Blackwell Publishing. 2005, 493. ISBN 978-1-4051-1672-5.