



Influence of Aerobic Training Programme on Selected Anthropometric Measurements Among College Level Obesity Girls

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ABSTRACT

The measure of obesity is done with BMI calculation. BMI is the Body Mass Index which has three grades. When the BMI rates above 25 it is considered as overweight. The best treatment for obesity is not by drugs but by the modification of one's life style. Daily exercise may help people to reduce obesity. Having a proper diet may prevent people from being obese. Avoiding to take fried items, fast food may help them reach out from over-cholesterol. Diet containing protein, carbohydrates, dairy products at appropriate levels will keep people healthy. The purpose the study was find out the influence of aerobic training programme on selected anthropometric measurements of college level obesity girls . To achieve the purpose of the study 120 students were selected. Based on the BMI calculation Sixty students (N=60) were selected from KG College of Health Sciences, Coimbatore, Tamil Nadu The subjects aged ranged between 17-22 years with moderate obesity who were able to perform the exercises were included for the study. Subjects were given aerobic training for three days a week, for a period of 12 weeks. The following formula was applied for selection of subjects. The selected participants were clearly explained about the procedures and a written consent is obtained from them. The research is approved by the ethical committee of the KG College of Health Sciences and no objection letter is obtained from the KG College of Health Science students. Once the participants accepted they were divided into three groups as Group A (Experimental Group), Group B (Experimental Group) and Group C (Control Group) through lottery method were lotteries contained the Group name equal in number. So each group consists of twenty participants .Group A & B (Experimental group I&II) – participants received Aerobic training and C (Control group) – participants received nothing, they remain controlled. All the training is given as one day per session on four days for twelve weeks only in the evening 06.00pm – 07.00pm. Each session consisted of one hour.

Key words: Aerobic training, obesity, Arm circumference , Thigh Circumference

Introduction

Obesity is the major worldwide problem. Obesity has become main cause for many other diseases such as cardiac diseases and disorders, hypertension, Types II diabetes mellitus, bladder problems, orthopaedic problems such as knee pain, back pain. The measure of obesity is done with BMI calculation. BMI is the Body Mass Index which has three grades. When the BMI rates above 25 it is considered as overweight. The best treatment for obesity is not by drugs but by the modification of one's life style. Daily exercise may help people to reduce obesity. In addition to exercise yoga and meditation may help to reduce the hypertension and overweight.

Methodology

Sixty students (N=60) were selected and the study duration was two years and individual training duration was twelve weeks. Simple random sampling method was used. The selected participants were divided into three groups and each group consists of twenty participants. Group A&B (Experimental group I&II) – participants received Aerobic training programme. The subjects were only females with age of 17-22 years with moderate obesity who were able to perform the exercises were included for the study. Among the various anthropometric measurements are Arm circumference , Thigh Circumference were analyzed using Digital measurements Analyzer before and after the twelve weeks of the training.

Statistical Technique

The data was collected from the selected 60 college student's prior to and after the training programme on the selected criterion variables. This data is statistically analyzed by Dependent 't' test to find out the significant improvement between pre & post-test. In order to find out significant different ,

among the three groups ANCOVA is used whenever 'F' ratio is found to be significant, Scheffe's test is used as post hoc test determine which of the paired means differed significantly in all cases the criterion for statistical significance is set at 0.05 level of confidence ($P < 0.05$)

TABLE 1

ANALYSIS OF COVARIANCE AMONG AEROBIC TRAINING GROUPS AND CONTROL GROUP ON ARM CIRCUMFERENCE

	Group	Mean	Source	Sum of Square	df	Mean Square	F-ratio
Pre-test	HIATG	15.36	B/S	1.04	2	0.52	0.44
	LIATG	15.04	W/S	67.54	59	1.18	
	CG	15.20					
Post test	HIATG	11.95	B/S	110.36	2	55.18	41.02*
	LIATG	12.68	W/S	76.68	59	1.34	
	CG	15.12					
Adjusted Mean	HIATG	11.82	B/S	116.05	2	58.02	81.15*
	LIATG	12.78	W/S	40.04	56	0.715	
	CG	15.13					

*Significant at 0.05 level (2.76)

RESULTS OF ARM CIRCUMFERENCE

Reveals the F-value for pre test 0.44 and post test 41.02 among the experimental groups aerobic training groups and control group on arm circumference. The obtained F-ratio for pre test and post test to be significant at 0.05 level for degree of freedom 2, 59 the required critical value is 2.76. Hence, the F-ratio (0.44) obtained for pre test is found to be not significant since it do not reach the required critical value 2.76. regarding the F-ratio for post test mean (41.02) is found to statistically significant since it is higher than their required critical value 2.76.

Based on F-ratio it is informed that experimental groups and control group were equal in this performance of arm circumference before they included into their respective treatment whereas, after completion of 12 week treatment period, experimental groups and control group were significantly different from one another in the performance of arm circumference. The F-ratio for arm circumference (81.15) obtained for adjusted post test mean is found to be significant at 0.05 level for degree of freedom 2, 56 the required critical value is 2.76. Based on the results, in testing the hypothesis that there may be significant difference among the effects of aerobic training groups and control group on anthropometric variables is rejected. The mean value of arm circumference among aerobic training groups and control group were graphically represented .

THE MEAN VALUES OF PRE TEST POST TEST AND ADJUSTED MEAN ON ARM CIRCUMFERENCE AEROBIC TRAINING GROUPS AND CONTROL GROUP

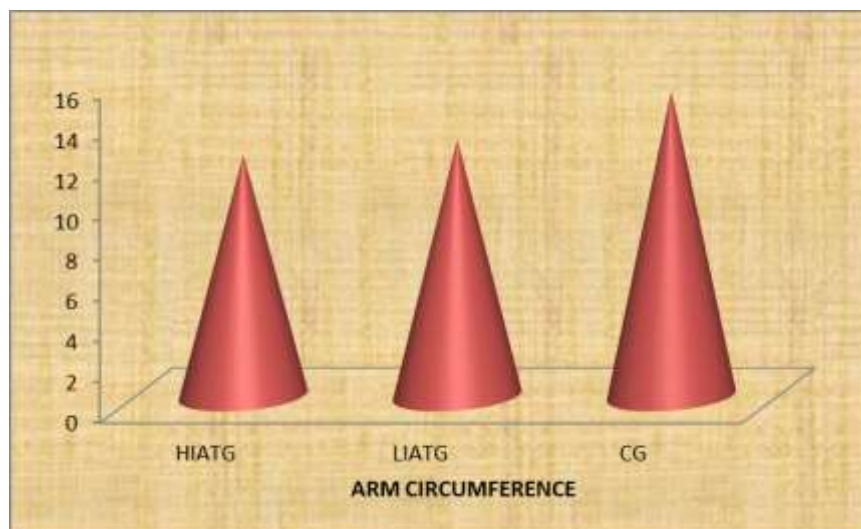


TABLE II

ANALYSIS OF COVARIANCE AMONG THE AERIBIC TRAINING GROUPS AND CONTROL GROUP ON THIGH CIRCUMFERENCE

	Group	Mean	Source	Sum of Square	df	Mean Square	F-ratio
Pre-test	HIATG	26.53	B/S	2.25	2	1.12	0.46
	LIATG	26.78	W/S	141.44	59	2.48	
	CG	26.30					
Post test	HIATG	25.03	B/S	44.98	2	22.49	8.00*
	LIATG	22.91	W/S	160.22	59	2.81	
	CG	23.91					
Adjusted Mean	HIATG	25.03	B/S	51.16	2	25.58	12.51*
	LIATG	22.93	W/S	114.53	56	2.04	
	CG	23.91					

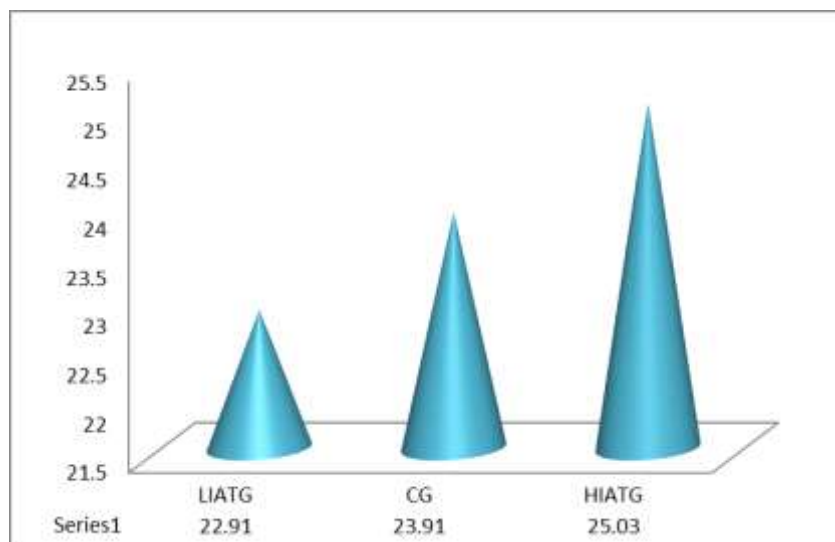
*Significant at 0.05 level (2.76)

RESULTS OF THIGH CIRCUMFERENCE

reveals the F-value for pre test 0.46 and post-test 8.00 among the experimental groups aerobic training groups and control group on accuracy throw. The obtained F-ratio for pre-test and post test to be significant at 0.05 level for degree of freedom 2, 59 the required critical value is 2.76. Hence, the F-ratio 0.46 obtained for pre test is found to be not significant since it do not reach the required critical value 2.76.regarding the F-ratio for post test mean 8.00 is found to statistically significant since it is higher than their required critical value 2.76.

Based on F-ratio it is informed that experimental group and control group are equal in this performance of thigh circumference before they included into their respective treatment whereas, after completion of 12 week treatment period, experimental groups and control group were significantly different from one another in the performance of thigh circumference. The F-ratio for thigh circumference (12.51) obtained for adjusted post-test mean is found to be significant at 0.05 level for degree of freedom 2, 56 the required critical value is 2.76 Based on the results, in testing the hypothesis that there may be significant difference among the effects of aerobic training groups is rejected. The mean value of aerobic training groups and control group were graphically represented

THE MEAN VALUES OF PRE TEST POST TEST AND ADJUSTED MEAN ON THIGH CIRCUMFERENCE AEROBIC TRAINING GROUPS AND CONTROL GROUP



Conclusion

1. The twelve week high intensity aerobic training group and low intensity aerobic training group significantly improved the selected body composition variables in college level obesity girls.
2. From the findings of the study the high intensity aerobic training group had better improvement than the low intensity aerobic training group in ,arm circumference
- 3 .From the findings of the study the high intensity aerobic training group had better improvement than the low intensity aerobic training group in thigh circumference

Recommendations

- 1 A similar study can be done in other group of populations.
- 2 A similar study can be done assessing the various other variables based on the selected populations like of biochemical and hematological variables.
- 3 A similar study can be conducted with large sample size.

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