

## IMPACT OF TRADITIONAL AND COMPUTER ASSISTED FITNESS TRAINING ON ENDURANCE AND MUSCULAR STRENGTH ON HEARING IMPAIRED STUDENTS

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### Abstract

The purpose of this study was to find out the impact of traditional training and computer assisted fitness training on endurance and muscular strength on hearing impaired students. The subjects selected for this study were in the age group of 14 – 18 years. The subjects were divided into three groups. Each group consisting of twenty each, namely, experimental group I, experimental group II and control group. The selected subjects were randomly divided into groups equally of which experimental Group – I underwent traditional training, group – II underwent computer assisted fitness training and group – III acted as Control Group. The following fitness variables were selected as dependent variables endurance and muscular Strength and the following variables were selected as independent variables traditional training and computer assisted fitness training. The data collected on selected criterion variables were subjected to statistical analyse using analysis of covariance (ANCOVA) to find out the significant difference if any between the groups on selected variables separately. The results presented in traditional training and computer assisted fitness training had an influence on the selected fitness variables, namely, endurance and muscular strength among hearing impaired students.

**Key words:** Traditional training, Computer assisted fitness training.

### Introduction

Fitness in the human body what fine tuning is to an engine. It enables us to perform up to our potential. Fitness can be described as a condition that helps us for better look, pleasant feel and do our best. More specifically, it is “the ability to perform daily tasks vigorously and alertly, with energy left over for enjoying leisure time activities and meeting emergency demands. It is the ability to endure, to bear up, to withstand stress, to carry on in circumstances where an unfit person could not continue, and is a major basis for good health and well being” (Singh, 1991).

**Methodology**

The purpose of this study was to find out the impact of traditional training and computer assisted fitness training on endurance and muscular strength on hearing impaired students. The subjects selected for this study were in the age group of 14 – 18 years. The subjects were divided into three groups. Each group consisting of twenty each, namely, experimental group I, experimental group II and control group. The selected subjects were randomly divided into groups equally of which experimental Group – I underwent traditional training, group – II underwent computer assisted fitness training and group – III acted as Control Group. The fitness variables were selected as dependent variables endurance was measured through Cooper’s 12 Minute Run / Walk test Muscular Strength was measured through push ups test. The initial and final scores in selected variables were subjected to statistical treatment using Analysis of Covariance (ANCOVA) to find out whether the mean differences were significant or not through the statistical packages for social sciences (SPSS, version 19.0 for Windows XP) was used to analyze the data. An alpha level of 0.05 was used to determine statistical significance.

**Results and discussions**

**TABLE I  
COMPUTATION OF ANALYSIS OF COVARIANCE**

		Computer assisted fitness training	Traditional training	Control group	SO V	Sum of squares	df	Mean square	F ratio
Endurance	Pre-test mean	1789.00	1819.75	1882.50	B	70835.83	2	45417.92	2.91
					W	889778.75	57	15610.15	
	Post-test mean	2303.50	2347.00	1883.75	B	7617885.83	2	1308942.92	79.91*
					W	933668.75	57	16380.15	
	Adjusted post-test mean	2318.13	2350.77	1865.35	B	2711072.31	2	1355536.15	92.27*
					W	822652.64	57	14690.23	
Muscular	Pre-test mean	18.65	18.80	19.70	B	12.9	2	6.45	2.97
					W	123.75	57	2.17	

	<b>Post-test mean</b>	20.45	20.55	19.95	B	4.13	2	2.07	0.86
					W	136.88	5 7	2.40	
	<b>Adjusted post-test mean</b>	20.72	20.72	19.51	B	17.52	2	8.76	6.04*
					W	81.20	5 6	1.45	

Table F-ratio at 0.05 level of confidence for 2 and 57 (df) =3.16, 2 and 56 (df) =3.16 \*Significant

Table I shows that the post test scores analysis proved that there was significant difference between the groups, as the obtained F value 79.91 was greater than the required F value of 3.16. This proved that the differences between the post test means of the 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 92.27 was greater than the required F value of 3.16. This proved that there were significant differences among the means due to twelve weeks varied aerobic exercises on fitness variable endurance.

Table I also shows that the post test scores analysis proved that there was no significant difference between the groups, as the obtained F value 0.86 was lesser than the required F value of 3.16. This proved that the differences between the post test means of the subjects were not 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 6.04 was greater than the required F value of 3.16. This proved that there were significant differences among the means due to twelve weeks varied aerobic exercises on fitness variable muscular strength.

Since significant improvements were recorded, the results were subjected to post hoc analysis using Scheffe’s Confidence Interval test. The results were presented in Table II.

**TABLE II**  
**SCHEFFE’S CONFIDENCE INTERVAL TEST**

	Means			Mean Difference	Required C I
	Computer assisted fitness training	Traditional training	Control group		
Endurance	2318.13	2350.77		32.64	95.44
	2318.13		1865.35	452.78*	95.44
		2350.77	1865.35	485.41*	95.44
Muscular Strength	20.72	20.72		0.00	0.95
	20.72		19.51	1.20*	0.95
		20.72	19.51	1.20*	0.95

\*significant

The multiple mean comparisons shown in Table II proved that there existed significant differences between the adjusted means of traditional training and control group, computer assisted fitness training and control group. There was no significant difference between traditional training and computer assisted fitness training groups on endurance and muscular strength.

### **Conclusions**

Traditional training and computer assisted fitness training groups, significantly improved the endurance and muscular strength of the students. There was no significant difference between traditional training and computer assisted fitness training groups.

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