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Influence of the Isolated and Combined Circuit and Fartlek Trainings on the Selected Strength Parameters among the College Men Students

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Abstract

The purpose of the study was to find out the influence of the isolated and combined circuit and fartlek trainings on the selected strength parameters among the college men students. To achieve the purpose of the study, 45 college men studying Bachelor of Law in the Central Law College, Salem, Tamil Nadu, India were selected. The age of the subjects ranged between 19 and 25 years. The selected subjects were divided into three experimental groups namely the circuit training group, fartlek training group and combined circuit and fartlek training group with fifteen subjects in (n=15) each. The three groups were called as Experimental Group I (circuit training), Experimental Group II (fartlek training) and Experimental Group III (combined training) in an equivalent manner. The duration of the training period will be restricted to twelve weeks and the number of sessions per week is confined to three. The initial test scores are called the Pre-test scores of the subjects. After the experimental treatment, all the forty five subjects were tested on their strength parameters. This final test scores are called the as Post-test scores of the subjects. The Pre-test and Post-test scores were subjected to the statistical analysis using the dependant 't' test and Analysis of Covariance (ANCOVA) to find out the significance among the mean differences, whenever the 'F' ratio for adjusted test was found to be significant, Scheffe's post hoc test was used. In all the cases 0.05 level of significance was fixed to test the hypotheses. The result reveals that there was a significant improvement in the experimental groups on the selected strength parameters when compared among the experimental groups. The circuit training group has showed better performance on the arm strength, leg strength and explosive strength than the other two groups.

Keywords: Circuit Training, Fartlek Training, Strength Parameters.

Introduction

Victory is accredited by many factors in the competitive sports, but training is essential part of the successfulness. The utmost goal of the training is to succeed the distinguished level of the performance. Training is requisite for two primary reasons that to give the scientific acquaintance and to use the performance assessment (Maclean, 2001).When circuit training is executed consistently over 8 to 12 weeks, it improves the oxygen consumption as well as the muscular endurance in the greater level (Osterberg & Melby 2000). The training workout schedule is performed with the exercises, with machines, hand – held weights, resistance and calisthenics etc. (Gotshalk et al, 2004). Fartlek is also recognized as speed play or changing speed. It is one of the prominent training methods and develops the aerobic and anaerobic potentialities (Hvilivilzky, 1999). The strength parameters are globally utilized in all the training sessions to find the sports participants' improvements. The circuit training and fartlek training develops strength and endurance parameters through the isolated as well as combined training schedules.

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Methodology

The purpose of the study was find out the influence of isolated and combined circuit and fartlek trainings on selected strength parameters among college men students. To achieve the purpose of the study, 45 college men were selected studying Bachelor of Law in the Central Law College, Salem, Tamil Nadu, India. The age of the subjects ranged between 19 and 25 years. The selected subjects were divided into three experimental groups namely circuit training group, fartlek training group, and combined circuit and fartlek training group with fifteen subjects in (n=15) each. The three groups were called as Experimental Group I (circuit training), Experimental Group II (fartlek training) and Experimental Group (combined training) in an equivalent manner. The duration of the training period will be restricted to twelve weeks and the number of sessions per week is confined to three. This initial test scores formed as Pre-test scores of the subjects. After the experimental treatment, all the forty five subjects were

tested on their strength parameters. This final test scores were called as Post-test scores of the subjects. The Pre-test and Post-test scores were subjected to the statistical analysis using dependant 't' test and Analysis of Covariance (ANCOVA) to find out the significance among the mean differences, whenever the 'F' ratio for adjusted test was found to be significant, Scheffe's post hoc test was used. In all the cases 0.05 level of significance was fixed to test the hypotheses. The investigator selected the following variables for the present investigation.

Table I. Variables and Test Items

S.No.	Variables	Test Items	Units
1	Arm Strength	Pull Ups	In Numbers
2	Explosive Strength	Vertical Jump	In Centimeters
3	Leg Strength	Leg Dynamometer	In Kilograms

Results and Discussion

The detailed procedure of analysis of data and interpretation were given below,

Table II. Significance of Mean Gains and Losses between Pre and Post-Test Scores on the Selected Strength parameters of the Circuit Training, Fartlek Training and Combined Circuit and Fartlek Training Groups

S.No.	Variables	t- values		
		Circuit Training	Fartlek Training	Combined Circuit and Fartlek Training
1	Arm Strength (In Numbers)	18.96*	13.23 *	12.16*
2	Leg Strength (In Kilograms)	12.03*	14.29*	15.69*
3	Explosive Strength (In Centimeters)	16.88*	9.22*	12.93*

The table II shows that that - values of three groups on selected strength parameters among the college men.

Table III. Analysis of Co-variance of Circuit Fartlek and Combined Training Groups on Selected Strength parameters among College Men

Sl. No	Variables	Source of Variance	Sum of Squares	df	Mean Squares	F-Value
Pre Test						
1	Arm Strength	**BG**	0.13	2	0.07	0.06
		WG	44.67	42	1.06	
2	Explosive Strength	**BG**	0.31	2	0.16	0.09
		WG	72.13	42	1.72	
3	Leg Strength	**BG**	6.41	2	3.21	0.08
		WG	1650.90	42	39.31	
Post Test						
1	Arm Strength	**BG**	17.73	2	8.87	8.65*
		WG	43.07	42	1.03	
2	Explosive Strength	**BG**	33.38	2	16.69	11.38*
		WG	61.60	42	1.47	
3	Leg Strength	**BG**	294.03	2	147.02	4.11*

		WG	1501.17	42	35.74	
Adjusted Post Test						
1	Arm Strength	**BG**	16.78	2	8.39	
		WG	16.37	41	0.40	21.01*
2	Explosive Strength	**BG**	31.86	2	15.93	
		WG	58.20	41	1.42	11.22*
3	Leg Strength	**BG**	232.29	2	116.14	
		WG	186.00	41	4.54	25.60 *

***** P < 0.05 Table F, df (2,42) (0.05) = 3.21

In table III, the result of analysis of variance of the Pre-test scores on the arm strength(0.06) explosive strength(0.09) and leg strength(0.08) were lesser than the table value of 3.21, indicating that it was not significant for the degrees of the freedom (2,42) at 0.05 level of confidence indicating that the random sampling was successful. The result analysis of variance of the Post-test scores on the arm strength (8.65) explosive strength (11.38) and leg strength (4.11) were greater than the table value of 3.21, indicating that it was significant for the degrees of freedom (2,42) at 0.05 level of confidence. The result analysis of covariance of adjusted post test scores on arm strength (21.01) explosive strength (11.22) and leg strength(25.60) were greater than the table value of 3.22 indicating that it was significant for the degrees of freedom (2,41) at 0.05 level of confidence.

Table IV. Scheffe's Post-Hoc Test of the Circuit Fartlek and Combined Training Groups for the Selected Strength Parameters among the College Men

Sl. No	**Variables**	**Means**			**Mean Difference**	**CI**
		CIRCUIT	**FARTLEK**	**COMBINED**		
1	Arm Strength	15.08	13.60	---	**1.48***	0.59
		15.08	---	14.52	**0.56**	
		---	13.60	14.52	**0.92***	
2	Explosive Strength	51.11	49.09	----	**2.02***	1.11
		51.11	----	49.74	**1.37***	
		----	49.09	49.74	**0.65**	
3	Leg Strength	105.39	99.92	---	**5.47***	1.98
		105.39	----	103.59	**1.80**	
		----	99.92	103.59	**3.66***	

From the table IV it can be seen that the mean differences between the circuit training group and fartlek training group; fartlek training group and combined training group of arm strength (1.48, 0.98) and leg strength (5.47, 3.66) greater than the confidential interval value 0.59, 1.98 respectively, which was significant at 0.05 level of confidence. The mean differences between the circuit training group and fartlek training group; circuit training group and combined training group of the explosive strength (2.02, 1.37 respectively) greater than the confidential interval value 1.11, which was significant at 0.05 level of confidence. The mean differences between the circuit training group and combined training group of the arm strength (0.65), fartlek training group and combined training group of the explosive strength (0.65) and circuit training group and combined training group of the leg strength (1.80) were lesser than the confidential interval values 0.59, 1.11 and 1.98 respectively, and the values are insignificant at 0.05 level of confidence.

Figure I. Shows the Mean Values of the Experimental Groups on the Arm Strength among College Men

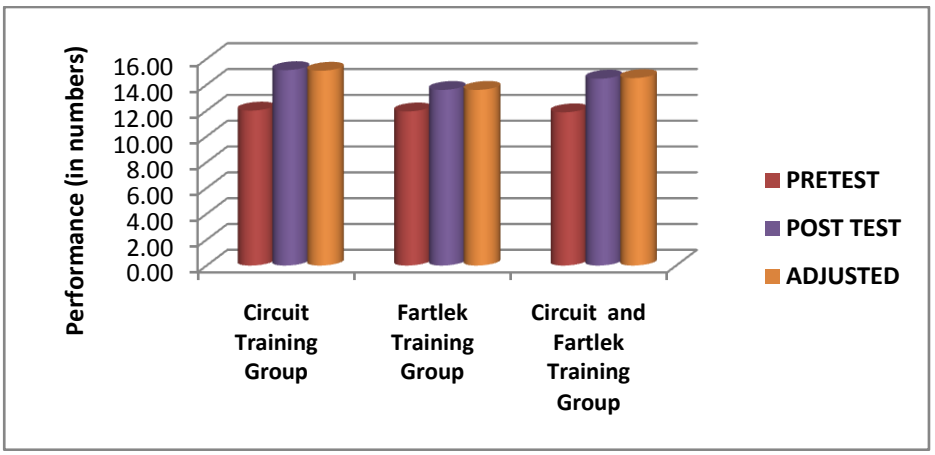


Figure II. Shows the Mean Values of the Experimental Groups on the Explosive Strength Among College Men

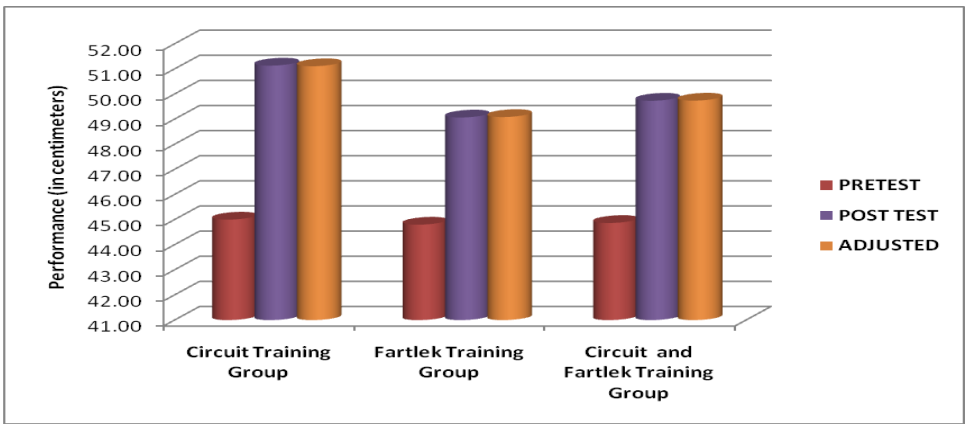
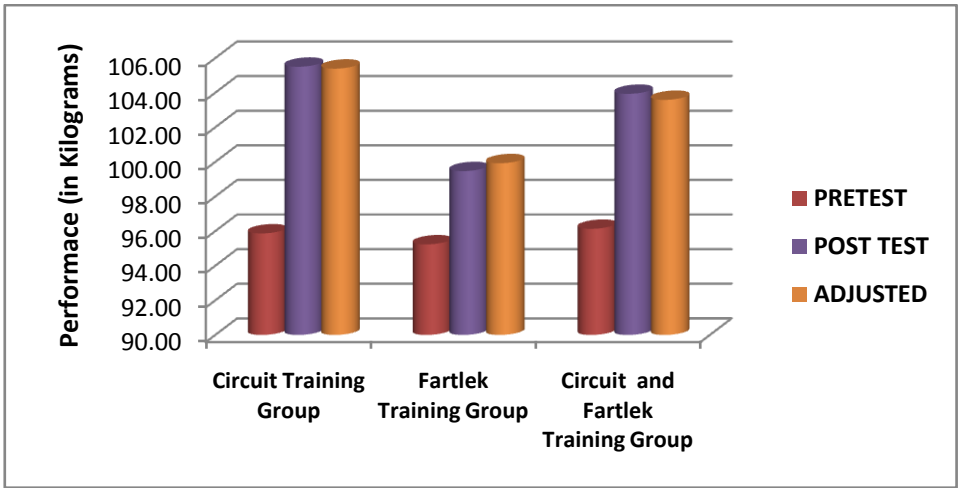


Figure III. Shows the Mean Values of the Experimental Groups on the Leg Strength Among College Men



Conclusions

In the light of the study undertaken with certain limitations imposed by the treatment conditions, the following conclusions were drawn.

1. The result of the study reveals that there was a significant enhancement in the experimental groups on the selected strength parameters when compared with the experimental groups after the completion of twelve weeks of circuit, fartlek and combined training groups.
2. The circuit training group is the most effective compared to the other training groups to develop the arm strength, explosive strength and leg strength.

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