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Effect of Various Muscles Specific Resistance Training Packages on Selected Physical Fitness Variables among Inter-Collegiate Football Players

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Abstract

The purpose of the study was to investigate the effect of various muscle specific resistance training packages on selected physical fitness variables among inter-collegiate football players. For the present study 60 players were selected as samples from affiliated colleges of Bharathiar University inter-collegiate football players, Tamilnadu were selected as subjects at random and their age ranged from 18 to 25 years. For the present study pre test – post test randomized group design which consists of experimental group and control group was used. The subjects were randomly assigned to two equal groups of thirty each and named as Group 'A' and Group 'B'. Group 'A' underwent Various Muscle Specific Resistance Training and Group 'B' underwent no training. The data was collected before and after twelve weeks of Various Muscle Specific Resistance Training. The data was analyzed by applying Analysis of Co-Variance (ANCOVA) technique to find out the effect of Various Muscle Specific Resistance Training on selected physical fitness variables among inter-collegiate football players. The level of significance was set at 0.05. The findings of the present study have strongly indicates that various muscle specific resistance training have significant effect on selected physical fitness variables i.e muscular strength, leg explosive power and cardio respiratory endurance of inter-collegiate football players. Hence the hypothesis earlier set that various muscle specific resistance training would have been significant effect on selected physical fitness variables in light of the same the hypothesis was accepted. Significant effect of various muscle specific resistance training was found on muscular strength, leg explosive power and cardio respiratory endurance.

Keywords: Various muscle specific resistance training, muscular strength, leg explosive power and cardio respiratory endurance, inter-collegiate football players.

Introduction

Performance in soccer results from the combination of physiological, psychological, social and environmental factors. Among the physiological factors, physical fitness was well-studied in elite adult players and recently there was an increasing scientific interest in the physiological predisposition of adolescent soccer players for future excellence (Reilly, Williams, Nevill & Franks, 2000).

Resistance training is a form of workout for the improvement of strength and size of skeletal muscles. Resistance training, also known as weight training or strength training, is for everyone. According to the American Sports Medicine Institute (ASMI) resistance training is a "specialized method of training designed to improve the muscle strength, muscle endurance, and muscle power". Resistance training can be executed in a variety of ways; with resistance machines, free-weights (dumbbells and barbells), rubber tubing, or own body weight, as in doing push-ups, squats or abdominal crunches.

The resistance training program has been shown effective in increasing muscle strength in youths, similar increases in the muscle sizes have been rather small. However, the studies (Mersch & Stoboy, 1989; Fukanaga, et al., 1992) that used more sensitive methods of measurements (magnetic resonance imagining and ultrasound) present the possibility of muscle hypertrophy in youths, although these small potential changes may be difficult to measure.

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Objective of the Study

The purpose of the study was to investigate the effect of effect of various muscle specific resistance training packages on selected physical fitness variables among inter-collegiate football players. It was hypothesized that there would have been a significant effect of various muscle specific resistance training packages on selected physical fitness variables among inter-collegiate football players.

Procedure and Methodology

For the present study 60 players were selected as samples from affiliated colleges of Bharathiar University inter-collegiate football players, Tamilnadu were selected as subjects at random and their age ranged from 18 to 25 years. For the present study pre test – post test randomized group design which consists of experimental group and control group was used. The subjects were randomly assigned to two equal groups of thirty each and named as Group 'A' and Group 'B'. Group 'A' underwent Various Muscle Specific Resistance Training and Group 'B' underwent no training. The data was collected before and after twelve weeks of Various Muscle Specific Resistance Training. The data was analyzed by applying Analysis of Co-Variance (ANCOVA) technique to find out the effect of various muscle specific resistance training on selected physical fitness variables among inter-collegiate football players. The level of significance was set at 0.05.

Results and Discussions on Findings

The findings pertaining to analysis of co-variance between experimental group and control group on selected physical fitness variables among inter-collegiate football players for pre-post test respectively have been presented in table No.1 to 3.

Table 1

ANCOVA between Experimental Group and Control Group on muscular strength of inter-collegiate football players for Pre, Post and Adjusted Test

	Experimental Group	Control Group	Source of Variance	Sum of Squares	df	Mean Square	F
Pre Test Mean	30.93	29.93	BG	15.00	1	15.00	1.62
			WG	537.73	58	9.27	
Post Test Mean	36.10	30.60	BG	453.75	1	453.75	43.15*
			WG	609.90	58	10.52	
Adjusted Post Mean	35.66	31.04	BG	311.93	1	311.93	90.41*
			WG	196.65	57	3.45	

**** Significant at 0.05 level.** **df: 1/57= 4.01**

Table No. 1 revealed that the obtained 'F' value of 90.41 was found to be significant at 0.05 level with df 1, 57 as the tabulated value of 4.01 required to be significant at 0.05 level. The same table indicated that there was a significant difference in adjusted means of muscular strength of inter-collegiate football players between experimental group and control group. The graphical representation of data has been presented in figure I.

Figure I

Comparisons of Pre – Test Means Post – Test Means and Adjusted Post – Test Means for Experimental Group and Control group in relation to Muscular Strength

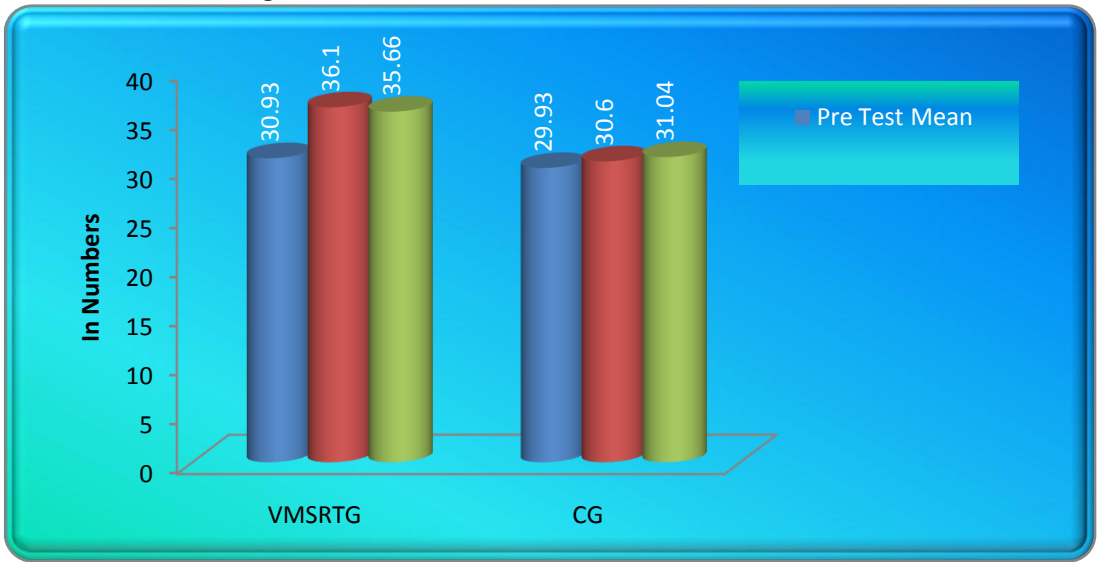


Table 2
ANCOVA between Experimental Group and Control Group on Leg Explosive Power of inter-collegiate football players for Pre, Post and Adjusted Test

	Experimental Group	Control Group	Source of Variance	Sum of Squares	df	Mean Square	F
Pre Test Mean	0.19	0.21	BG	0.01	1	0.01	0.49
			WG	1.08	58	0.03	
Post Test Mean	0.36	0.23	BG	0.21	1	0.21	32.40*
			WG	0.38	58	0.01	
Adjusted Post Mean	0.35	0.23	BG	0.20	1	0.20	31.26*
			WG	0.36	57	0.00	

**** Significant at 0.05 level.** **df: 1/57= 4.01**

Table No. 2 revealed that the obtained 'F' value of 31.26 was found to be significant at 0.05 level with df 1, 57 as the tabulated value of 4.01 required to be significant at 0.05 level. The same table indicated that there was a significant difference in adjusted means of leg explosive power of inter-collegiate football players between experimental group and control group. The graphical representation of data has been presented in figure II.

Figure II
Comparisons of Pre – Test Means Post – Test Means and Adjusted Post – Test Means for Control group and Experimental Group in relation to leg explosive power

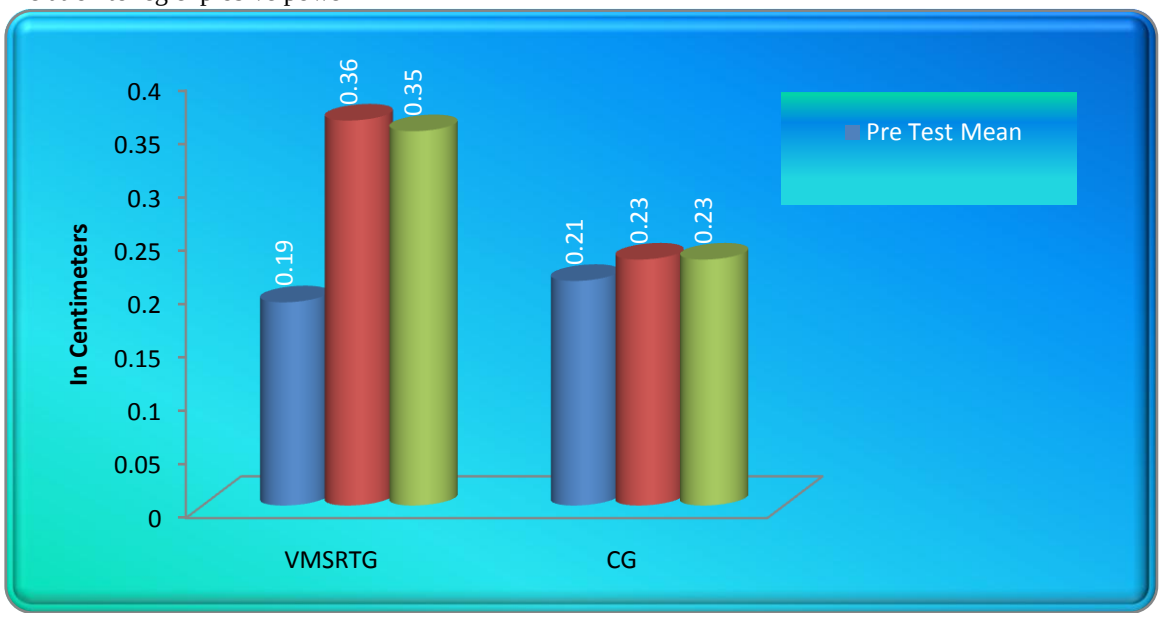


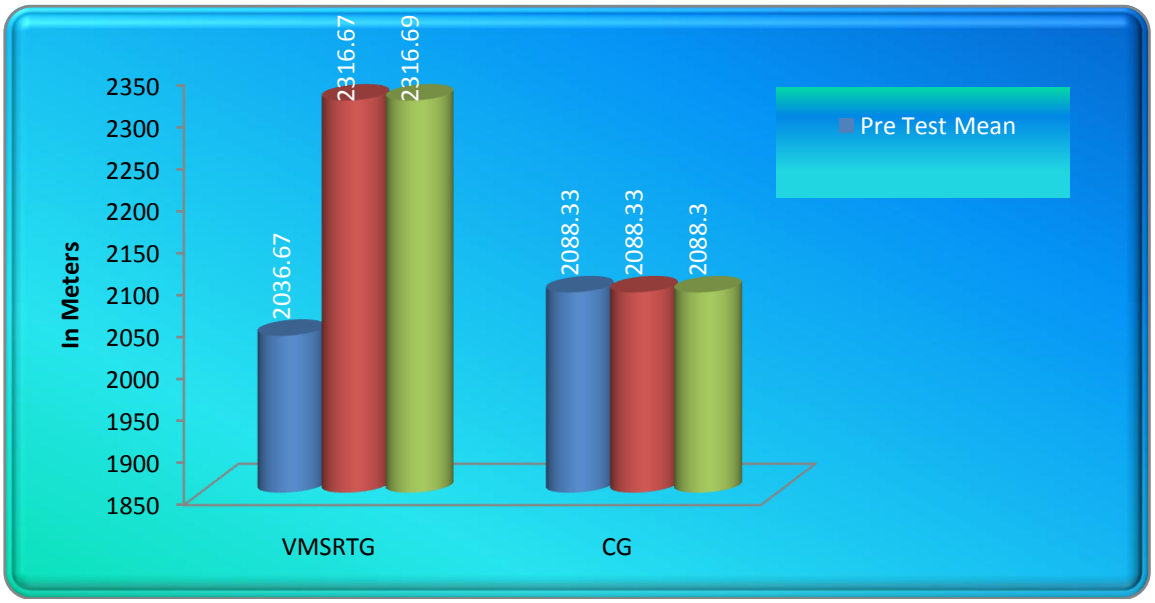
Table 3
ANCOVA between Experimental Group and Control Group on cardio respiratory endurance of inter-collegiate football players for Pre, Post and Adjusted Test

	Experimental Group	Control Group	Source of Variance	Sum of Squares	df	Mean Square	F
Pre Test Mean	2036.67	2088.33	BG	40041.67	1	40041.67	2.35
			WG	988083.33	58	17035.92	
Post Test Mean	2316.67	2088.33	BG	782041.67	1	782041.67	28.17*
			WG	1610083.33	58	27760.06	
Adjusted Post Mean	2316.69	2088.30	BG	1118410.48	1	1118410.48	94.14*
			WG	677206.54	57	11880.82	

**** Significant at 0.05 level.** **d/f: 1/57= 4.01**

Table No. 3 revealed that the obtained 'F' value of 94.14was found to be significant at 0.05 level with df 1, 57 as the tabulated value of 4.01 required to be significant at 0.05 level. The same table indicated that there was a significant difference in adjusted means of cardio respiratory endurance of inter-collegiate football players between experimental group and control group. The graphical representation of data has been presented in figure No.3.

Figure III
Comparisons of Pre – Test Means Post – Test Means and Adjusted Post – Test Means for Control group and Experimental Group in relation to Cardio Respiratory Endurance



In case of psychological variables i.e. muscular strength, leg explosive power and cardio vascular endurance results between pre and post (12 weeks) test has been found significantly higher in experimental group in comparison to control group. In the context of the present trend, the rational use of resistance training is essential to improve the physical fitness variables. Since, the resistance training specially improves the physical components and directs it towards positive self nature which, directly contribute to enhancement in their muscular strength, leg explosive power and cardio vascular endurance and due to regular training programme of various muscles specific resistance training which may also bring sudden spurt in physical variables in inter-collegiate football players.

The findings of the present study have strongly indicates that various muscle specific resistance training packages have significant effect on selected physical

variables i.e., muscular strength, leg explosive power and cardio vascular endurance of inter-collegiate football players. Hence the hypothesis earlier set that various muscles specific resistance training would have been significant effect on selected physical variables in light of the same the hypothesis was accepted.

Conclusions

On the basis of findings and within the limitations of the study the following conclusions were drawn: Significant effect of various muscles specific resistance training was found on muscular strength, leg explosive power and cardio vascular endurance.

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