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Effect of cross training program on selected speed among football players

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Abstract

The present study was to determine the effect of cross training program on selected speed among footballers. Eighty male students ($n = 80$) were randomly selected as subjects and the age were ranged between 19 and 22 years. The selected subjects were randomly assigned into four equal groups such as training groups(TG) and the control group (CG) for the strengths of twenty ($n = 20$) each. Experimental training groups underwent respective cross training programme for twelve weeks for three days per week and two sessions on each day. The control group did not involve in any special training apart from their regular activities. The speed was taken as a criterion variable for the present study and it was measured by 50m dash. Analysis of covariance (ANCOVA) was used to analyse the collected data. The results revealed that that the cross training was made significant improvement ($p \leq 0.05$) in speed of the selected subjects. The level of confidence was fixed at 0.05 in all cases.

Keywords: Cross training, speed, football players.

Introduction

Sports performance has dramatically progressed over the past few years. Performance levels unimaginable before are now possible, and the number of athletes capable of producing outstanding results is increasing. One factor is that sports is now a challenging field, and intense motivation has encouraged long, hard hours of work and also, coaching has become more sophisticated, partially from the assistance of sport specialists and scientists. All the coaches, trainers, physical education personals and doctors are doing their best to improve the performance of the players. Training is a programme of exercise designed to improve the skills and to increase the energy capacity of an athlete for a particular event, therefore training is essential for the development of physical fitness components (Masuda, 2003)^[5] Training is a programme of exercise designed to improve the skills and to increase the energy capacity of an athlete for a particular event, therefore training is essential for the development of physical fitness components. Speed is the capacity of moving a limb or part of the body's lower system or the whole body with the greatest possible velocity (Dick, 1992)^[3].

Materials and Methods

The present study was to determine the effect of cross training program on selected speed among footballers. Eighty male students ($n = 80$) were randomly selected as subjects and the age were ranged between 19 and 22 years. The selected subjects were randomly assigned into four equal groups such as training groups(TG) and the control group (CG) for the strengths of twenty ($n = 20$) each. Experimental training groups underwent respective cross training programme for twelve weeks for three days per week and a session on each day. The control group did not involve in any special training apart from their regular activities. The speed was taken as a criterion variable for the present study and it was measured by 50m dash. Cross training session was conducted for experimental groups for 20 minutes for two sessions in each day. Experimental groups were given training in familiarizing the basic skills during the first six weeks. Analysis of covariance (ANCOVA) was used to analyse the collected data. The results revealed that that the cross training was made significant improvement ($p \leq 0.05$) in speed of the selected subjects. The level of confidence was fixed at 0.05 in all cases.

Data Analysis

Mean and Standard deviation were calculated for speed of each training group. And the data were analyzed by using

analysis of covariance (ANCOVA). Statistical significance was fixed at 0.05 levels.

Table 1: Analysis of Covariance on Speed among Control and Cross Training Groups

	Control Group	Cross Training Group-I	Cross Training Group-II	Cross Training Group-III	SOV	Sum of Squares	Df	Mean Squares	F- Ratio
Pre Test Mean	7.31 (±0.25)	7.42 (±0.27)	7.29 (±0.22)	7.31 (±0.18)	Between	0.19	3	0.06	1.17
					Within	4.17	76	0.05	
Post Test Mean	7.25 (±0.19)	7.06 (±0.16)	7.05 (±0.19)	6.86 (±0.21)	Between	1.48	3	0.49	13.84*
					Within	2.71	76	0.04	
Adjusted post Test Mean	7.26	6.99	7.07	6.87	Between	1.56	3	0.52	44.45*
					Within	0.87	75	0.01	

Table F-ratio at 0.05 level of confidence for 3 and 76 (df) =2.49, 3 and 75(df) =2.49

* Significant at 0.05 level.

Table- I shows that the pretest means of control group, cross training group I, II and III were 7.31 (±0.25), 7.42 (±0.27), 7.29 (±0.22) and 7.31(±0.18) respectively. The obtained F value of 1.17 was less than the required table value 2.49. This proved that there was no significant mean difference between the groups at post test period.

The posttest means of the variable speed among control group, cross training group I, II and III were 7.25 (±0.19), 7.06 (±0.16), 7.05(±0.19) 6.86 (±0.21) respectively. The obtained F value of 13.84 was greater than the required table value of 2.49. This proved that there was a significant mean difference among the groups after the twelve weeks training.

The adjusted posttest means of the control group, cross training group I, II and III were 7.26, 6.99, 7.07 and 6.87 respectively. The obtained F value of 44.45 was greater than the required table value of 2.49. This proved that there was a significant mean difference among the three groups.

Since the obtained F ratio of the adjusted posttest means was found to be significant, Scheffe's post hoc test was applied. The obtained paired mean differences among the training and control group, between the training groups and the confidence interval required for significance are presented in table-II.

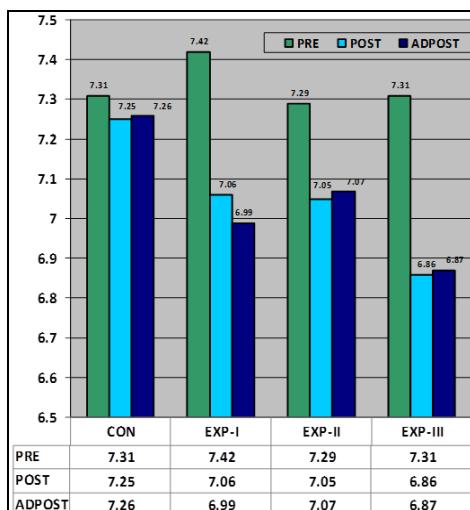
Table 2: Scheffe's Confidence Interval Test Scores and the Mean Differences between the Groups on Speed

Control Group	Means of			Paired Mean Difference	Confidence Interval
	Cross Training Group-I	Cross Training Group-II	Cross Training Group-III		
7.26	6.99			0.27*	0.08
7.26		7.07		0.19*	0.08
7.26			6.87	0.39*	0.08
	6.99	7.07		0.08*	0.08
	6.99		6.87	0.12*	0.08
		7.07	6.87	0.20*	0.08

*Significant at 0.05 level

The paired mean difference obtained for cross training groups I, II and III when compared with control group were 0.27, 0.19 and 0.39 respectively. The paired mean difference between cross training groups I&II, I&III and II&III were 0.08, 0.12 and 0.20 respectively. All the paired mean differences were higher than the confidence interval value. The results of the study also show that all the three

trainings had resulted in a significant improvement in speed as compared with control group. Among the three training groups, cross training group-III (*football training and resisted running*) was superior, followed by cross training group-I (*football training and plyometric training*) and cross training group-II (*football training and aerobics training*).

**Fig 1:** Bar Diagram Showing Pre, Post and Adjusted Post Test Means of Control and Experimental Groups on Speed

Discussion

The result of the present study pointed out that there were significant differences in speed due to twelve weeks of cross training program. The current study utilized twelve weeks programme duration with two sessions per week and found that explosive strength and speed increases due to cross training program. The findings are also in agreement with the findings of Sivaraman, *et al.* (2012) that cross training increases speed, explosive strength. The result also shows that functional and plyometric training positively influences the explosive power and speed Murugan and Nageswaran (2014), Subramanian (2014) also findings that there was a significant improvement on speed, strength and endurance due to cross training. From the results of the present study and literature, it is concluded that dependent variable speed were significantly increased due to cross training program.

Conclusion

The result of the study revealed that the training groups has significant improvement in speed among university men football players after the cross training protocol. It was also concluded that the cross training program is one of the best training methods for increasing the speed and as well as the physical fitness of football players.

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