EFFECTS OF SIX WEEKS OF ANAEROBIC TRAINING WITH SKILL PRACTICE ON SELECTED MOTOR FITNESS COMPONENTS AND SKILL PERFORMANCE PARAMETERS OF INTER COLLEGIATE FOOTBALL PLAYERS

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Abstract:-The study was designed to find out the effects of six weeks of anaerobic training with skill practice on selected motor fitness components and skill performance parameters of inter collegiate football players. To achieve the purpose of the study, 45 college men football players were selected from Bharathiar University department of physical education, Sri Narayanaguru College and PSG College of Arts and Science Coimbatore. Their age group ranged from twenty one to twenty eight were divided into three equal groups. The subjects were tested on selected motor fitness variables (Speed- 50 meters dash and explosive power–standing broad jump) and skill performance variables(Dribbling- Warner dribbling test, passing and shooting- Mor-Christian general soccer ability skill test battery) using the standardized tools. The subjects of the Experimental group I were administrated anaerobic with skill practice, Experimental group II were administrated only skill practice for six week session, they were trained for three alternately days a week for about six weeks during the course of treatment. The subjects of control group PSG college of arts and science were not underwent any specific training. After completion of the treatment period, the subjects of three groups were tested on selected variables and the scores were recorded in their respective units as post-test scores. The statistical tools used are described here. Analysis of co-variance was applied to determine whether the training programmes produced significantly different improvements in selected variables after 6 weeks of training. Since the initial means were not matched, comparisons between actual could not be made, all means were adjusted by regression to a common mean. The significance on difference of pairs of adjusted final group means was tested for significance by applying scheffe's post hoc test.

Keywords: Anaerobic Training, Skill Practice Training, Speed, Explosive Power, Dribbling, Passing And Shooting .

INTRODUCTION

Sports have become as competitive as other fields in the world. In ancient times, our ancestors exhibited the extraordinary talents in terms of physical activity. But now it has become completely professional. Somehow or other irrespective of age the human race is involved in different kinds of sports either for recreation or competition. In the present world, Sports have become extremely competitive. It is not mere participation or practice that makes an individual victorious. Sports life is affected by various factors like physiology, biomechanics, sports training, sports medicine, sociology and coaching, computer application and psychology and so on. To achieve top level performance in the international arena one has to have a plan and systematic execution. To win medals, in the Olympics, there should be spotting of talent, systematic and scientific method of training, competitive exposure, etc. Soccer requires intermittent physical activity in which sequences of actions requiring a variety of skills of varying intensities are strung together. Running is the predominant activity, yet explosive type efforts such as sprints, jumps,

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duels, and kicking are important factors for successful soccer performance. These efforts depend on maximal strength and anaerobic power of the neuromuscular system, more particularly of the lower limbs. Maximal strength refers to the highest force that can be performed during one maximum voluntary contraction, and is considered important for soccer performance. By increasing the available force of muscular con traction in appropriate muscles or muscle groups, acceleration and speed in skills critical to soccer such as turning, sprinting, jumping, and changing pace may improve (Bangsbo J. 1994). The evaluation of muscle strength of the lower extremities in soccer has been performed using isokinetic peak torque and free weights (Bosco C, Rusko H, Hirvonen J 1986). Anaerobic power refers to the ability of the neuromuscular system to produce the greatest possible impulse in a given time period. Sprint performance vertical jumps, and kicking performance have been used to test the anaerobic power of soccer players. Indeed, in many studies some strength and anaerobic power characteristics differentiated elite from non-elite soccer players (Brewer J, Davis JA 1991).

METHODOLOGY

The study was designed to find out the effects of six weeks of anaerobic training with skill practice on selected motor fitness components and skill performance parameters of inter collegiate football players. To achieve the purpose of the study, 45 college men football players were selected from Bharathiar University department of physical education, Sri Narayanaguru College and PSG College of Arts and Science Coimbatore. Their age group ranged from twenty one to twenty eight were divided into three equal groups. The subjects were tested on selected motor fitness variables (Speed- 50 meters dash and explosive power–standing broad jump) and skill performance variables(Dribbling- Warner dribbling test, passing and shooting- Mor-Christian general soccer ability skill test battery) using the standardized tools. The subjects of the Experimental group I were administrated anaerobic with skill practice, Experimental group II were administrated only skill practice for six week session, they were trained for three alternately days a week for about six weeks during the course of treatment. The subjects of control group PSG college of arts and science were not underwent any specific training. After completion of the treatment period, the subjects of three groups were tested on selected variables and the scores were recorded in their respective units as post-test scores. Analysis of co-variance was applied to determine whether the training programmes produced significantly different improvements in selected variables after 6 weeks of training. Since the initial means were not matched, comparisons between actual could not be made, all means were adjusted by regression to a common mean. The significance on difference of pairs of adjusted final group means was tested for significance by applying scheffe's post hoc test.

ANALYSIS OF DATA

The level of significance was set at 0.05 level of confidence which was considered adequate for the purpose of this study.

Table - 1
Analysis of co-variance on speed and explosive power of pre test and post test

Variables	Test	A WSP	SP	CG	SS	df	MS	F
Speed	Pre-test	7.41	7.35	7.35	.024	2	.01	0.21
					2.41	42	.05	
	Pos-test	7.13	7.21	7.35	0.37	2	.18	5.04*
					1.54	42	.03	
	Adj. Post	7.11	7.22	7.36	.484	2	.242	31.64*
					.314	41	.008	
Explosive Power	Pre-test	1.88	1.87	1.89	0.01	2	0.001	0.06
					0.11	42	0.03	
	Pos-test	1.99	1.97	1.92	0.43	2	0.22	12.67*
					0.7	42	0.02	
	Adj. Post	2.00	1.97	1.92	.048	2	.024	27.78*
					.035	41	.001	

Table 1 shows that the pre test mean on speed and explosive power of anaerobic training with skill practice, group skill practice group and control group are 7.41, 7.35, 7.35 and 1.88, 1.87, 1.89 respectively and the obtained 'f' value 0.21 and 0.06 since the obtained f ratio is lesser than the required table value of 3.22 it was found to be speed was statically insignificant at 0.05 level of confidence for 2 and 42 degrees of freedom.

The post test mean on speed and explosive power of the anaerobic training with skill practice group, skill practice group and control group are 7.13, 7.21, 7.35 and 1.99, 1.97, 1.92 respectively and the obtained 'f' value 5.04 and 12.67 since the obtained f ratio is higher than the required table value of 3.23 it was found to be speed was statically significant at 0.05 level of confidence for 2 and 42 degrees of freedom.

The adjusted post-test mean on speed and explosive power of anaerobic training with skill practice group, skill practice group and control group are 7.11, 7.22, 7.36 and 2.00, 1.97, 1.92 respectively and the obtained 'f' value 31.64 and 27.78. Since the obtained f ratio is higher than the required table value of 3.23. It is found to be speed was statically significant at 0.05 level of confidence for 2 and 41 degrees of freedom.

Therefore it was concluded that there is a significant different among the adjusted means of anaerobic training with skill practice group, skill practice group and control group on speed and explosive power. To determine which of the adjusted means had a significant difference, the scheffe's post –hoc test was used and the results are presented in table 2.

Table - 2
Scheffe's test for the difference between the adjusted post test means on speed and explosive power

Variables	A WSP	SP	C G	M D	C.V
Speed	7.11	7.22	-------	0.11*	0.08
	7.11	-------	7.36	0.25*	
	--------	7.22	7.36	0.24*	
Explosive Power	2.00	1.97	------	0.03*	0.03
	2.00	-----	1.92	0.08*	
	------	1.97	1.92	0.05*	

The table 2 shows that the adjusted post means difference on speed and explosive power between anaerobic training with skill practice group, skill practice group and control group are 0.11, 0.25, 0.24 and 0.03, 0.08, 0.05 respectively, which is higher than the confidence interval value 0.08 and 0.03 for significance at 0.05 level of confidence. Concluded from the results of the study that there was a significant difference between the adjusted post means of anaerobic training with skill practice group, skill practice group and control group on speed and explosive power.

Table - 3
Analysis of covariance on dribbling, passing and shooting of pre test and post test

Variables	Test	AWSP	SP	CG	SS	df	MS	F
Dribbling	Pre-test	13.77	13.77	13.76	0.02	2	.001	.001
					42.8	42	1.021	
	Pos-test	12.22	13.45	13.76	19.93	2	9.96	10.93*
					38.27	42	.911	
	Adj Post	12.22	13.45	13.77	20.18	2	10.093	34.63*
					11.94	41	.291	
Passing	Pre-test	3.13	3.06	3.13	0.4	2	0.2	.945
					16.4	42	3.9	
	Pos-test	5.26	4.60	3.93	13.3	2	6.6	6.01*
					25.4	42	6.0	
	Adj Post	5.26	4.61	3.92	13.33	2	6.668	11.16*
					24.49	41	.597	
Shooting	Pre-test	90.8	90.4	90.0	4.8	2	2.4	.981
					52.80	42	125.7	
	Pos-test	103.2	100.0	91.2	1158	2	579.2	6.53*
					3724	42	88.6	
	Adj Post	102.98	100.00	91.41	1082.64	2	541.321	9.87*
					2246.73	41	54.798	

Table 3 shows that the pre test mean on dribbling, passing and shooting of anaerobic training with skill practice, group skill practice group and control group are 13.77, 13.77,13. 76, 3.13, 3.06, 3.13 and 90.8, 90.4, 90.0

respectively and the obtained 'f' value 0.001,0.01 and 0.98 since the obtained f ratio is lesser than the required table value of 3.22 it was found to be dribbling, passing and shooting was statically insignificant at 0.05 level of confidence for 2 and 42 degrees of freedom.

The post test mean on dribbling, passing and shooting of the anaerobic training with skill practice group, skill practice group and control group are 12.22, 13.45, 13.76, 5.26, 4.60, 3.92 and 103.2, 100.0, 91.2 respectively and the obtained 'f' value 10.93, 6.01 and 6.53. Since the obtained f ratio is higher than the required table value of 3.23 it was found to be dribbling, passing and shooting was statically significant at 0.05 level of confidence for 2 and 42 degrees of freedom.

The adjusted post-test mean on dribbling, passing and shooting of anaerobic training with skill practice group, skill practice group and control group are 12.22, 13.45, 13.77, 5.26, 4.61, 3.92   and 102.98, 100.0, 91.41 respectively and the obtained 'f' value 34.63, 11.16 and 09.87. Since the obtained f ratio is higher than the required table value of 3.23. It is found to be dribbling, passing and shooting was statically significant at 0.05 level of confidence for 2 and 41 degrees of freedom.

Therefore it was concluded that there is a significant different among the adjusted means of anaerobic training with skill practice group, skill practice group and control group on dribbling, passing and shooting. To determine which of the adjusted means had a significant difference, the scheffe's post –hoc test was used and the results are presented in table 4.

Table - 4
Scheffe's test for the difference between the adjusted post test means on dribbing

Variables	A WSP	SP	C G	M D	C.V
Dribbling	12.22	13.45	------	1.23*	0.49
	12.22	-----	13.77	1.55*	
	------	13.45	13.77	0.32	
Passing	5.26	4.61	------	0.65	0.71
	5.26	-----	3.92	1.34*	
	------	4.61	3.92	0.69	
Shooting	102.98	100.00	------	2.98	6.85
	102.98	-------	91.41	11.57*	
	------	100.00	91.41	8.59*	

The table 4 shows that the adjusted post means difference on dribbling, passing and shooting between anaerobic training with skill practice group, skill practice group and control group are 1.23, 1.55, 0.32, 0.65, 1.34, 0.69 and 2.98, 11.57, 8.59 respectively, which is higher than the confidence interval value 0.49, 0.71 and 6.85 for significance at 0.05 level of confidence. Concluded from the results of the study that there was a significant difference between the adjusted post means of anaerobic training with skill practice group, skill practice group and control group on dribbling, passing and shooting.

CONCLUSION

From the statistical analysis, it was found that there was a significant mean difference in the improvement on speed and explosive power of men football players. The result of statistical analysis reveals that there is a significant mean difference in the improvement on skill performance variables dribbling, passing and shooting of men football players due to six weeks of anaerobic training and skill practice.

In conclusion, while soccer performance is not determined solely by physical factors, this investigation has revealed that professional players differ from amateurs in terms of knee flexor muscle strength and short-distance sprinting speed. According to (Wisloff 1998) a higher level of both strength and power variables would be preferable in soccer and would reduce the risk for injuries and allow for more powerful jumps kicks, tackles, and sprints among other factors. Greater emphasis on these aspects could help the coach to effectively develop training programs and thus further improve the level of play in soccer.

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