

Effect of Continuous Running Fartlek and Interval Training on Speed and Coordination among Male Soccer Players

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Abstract

The aim of this study was to finding out the effect of Continuous running Fartlek training and Interval training on Speed and Coordination among male soccer players. To achieve the purpose of the study 60 intercollegiate male football players were selected as subject at random from in an around the Guntur district of Andhra Pradesh and their age ranged of the subject is between 18 to 23years.The subject was divided into four group namely experimental group A, experimental group B, experimental group C and Control group D. Experimental group A underwent to Continuous running training, experimental group B underwent to Fartlek training, experimental group C underwent to Interval training and group D act as a control group they did not participate in any of the training programme other than their regular activates. The data was collected from four groups' pre and post of the experimental period. The raw data on speed and coordination was statistically analyzed by using Analysis of Covariance (ANCOVA). Scheffe's post hoc test was applied to determine the significant differences between the paired adjusted means. In all the cases 0.05 level of significance was fixed. The result of the study showed that there was as significantly improvement was found in speed and Coordination among the experimental group when compared with control group.

Keywords: Plyometric training, weight training, erythrocyte

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I. Introduction

Aerobic Physical work out are done with oxygen. Use of oxygen in the body metabolic or energy generating process to perform the work by muscles is referred as aerobics. Many types of exercise performed at moderate levels of intensity for extended periods of time are known as aerobic activity. Warming up exercise involving large muscles groups followed by at least 20 minutes and a cooling down exercise at moderate to intensity are also known as aerobic activity. Speed is the capacity of the individual performs successive movement of the same pattern a fastest rate. Coordination is performed pre-requisite and is primarily determined by mechanism involved in control and regulation of movement. It is dependent on the coordinative process of nervous system and functional capacity of sense organs. Coordination is the ability of the performer to integrate types of body movement into specific patterns. Fartlek training is said to be the forerunner of the interval training system. It involves alternating fas-and

slow running over natural terrain. Interval training is a programme of repeated running with a set of resting full jogging after each repetition¹³. Continuous training is when an athlete's exercise in a steady aerobic way without any pauses or breaks in between.



Fig .1: Aerobic exercise posture

II. Implementation Proposal

The purpose of the study was to find out the effect of Continuous running, Fartlek and Interval training on speed and coordination of male football players. It was hypothesized that the effect of continuous running Fartlek training and Interval training on speed and coordination would be significantly improve when compared with the control group.

III . Experimental Design & Methodology

To achieve the purpose of the presented study, sixty Inter collegiate football men players were selected at random from in an around the Guntur district of Andhra Pradesh their age ranged between 18 to 23 years. The selected subject was divided into four group namely experimental group A, experimental group B, experimental group C and Control group D. Experimental group A underwent to Continuous running, experimental group B underwent to Fartlek training, experimental group C underwent to Interval training and group D act as a control group they did not participate in any of the training programme other than their regular activates. Training was given for twelve weeks and alternative days in a week. The data was collected from four groups' pre and post of the experimental period and raw data was statistically analyzed by using Analysis of Covariance (ANCOVA). Scheffe's post hoc test was applied to determine the significant differences between the paired adjusted means. In all the cases 0.05 level of significance was fixed..

IV. Data Analysis & Results

The adjusted post-test mean values on speed for Continuous running group (CRG), Fartlek training group (FTG), Interval training group (ITG) and control groups (CG) were 8.26, 8.25, 8.20 and 8.44 respectively. The obtained 'F' value of 225.79 for adjusted post test scores on speed, which was higher than the table value of 2.77 for significance with df 3 and 55 at 0.05 level of confidence..

Table - I : Analysis of Covariance of data on speed between pre and post test of Continuous running group, Fartlek training group, Interval training group and control group

	CRG	FTG	ITG	CG	Sources of variance	Sum of square	df	Mean Square	'F' ratio
Pre -test									
Mean	8.26	8.31	8.27	8.35	B	0.083	3	.028	2.24
SD	0.11	0.11	0.91	0.11	W	0.689	56	.012	
Post -test									
Mean	8.23	8.26	8.17	8.50	B	0.91	3	0.306	28.54*
SD	0.10	0.11	.088	0.10	W	0.59	56	0.011	
Adjusted post-test Mean	8.26	8.25	8.20	8.44	B	0.469	3	0.156	225.79*
					W	0.380	55	0.001	

*Significant at 0.05 level of confidence

(The table value required for significant at 0.05 level with df 3 and 56 & 3 and 55 are 2.77 and 2.77 respectively)

The result of the study showed that there was significant difference among Continuous running group (CRG), Fartlek training group (FTG), Interval training group (ITG) and control group (CG) on speed. Since the four groups were involved the Scheffe's post hoc test was applied to find out the paired mean differences if any, and it is presented in table II.

Table- II : Scheffe's post hoc test for the differences between paired adjusted post test means of Speed

CRG	FTG	ITG	CG	MD	CI
8.26	8.25	-	-	0.01	0.03
8.26	-	8.20	-	0.06*	
8.26	-	-	8.44	0.18*	
-	8.25	8.20	-	0.05*	
-	8.25	-	8.44	0.19*	
-	-	8.20	8.44	0.24*	

*Significant at 0.05 level of confidence

The table II Shows that the adjusted post test mean differences of Continuous running group (CRG) and Interval running group (IRG), Continuous running group (CRG) and control group (CG), Fartlek training group (FTG) and Interval training group (ITG), Fartlek training group (FTG) and Control group (CG) and Interval training group (ITG) and Control group (CG) were 0.06, 0.18, 0.05, 0.19 and 0.24 respectively. They were greater than the confidence interval value 0.03 at 0.05 level, which indicate that there is a significant differences among the group of Continuous running group (CRG) and Interval training group (ITG), Continuous running group (CRG) and control group (CG), Fartlek training group (FTG) and Interval training group (ITG), Fartlek training group (FTG) and Control group (CG) and Interval training group (ITG) and Control group (CG). The Comparison of pre, post and adjusted post mean values of speed for Continuous running group (CRG), Fartlek training group (FTG), Interval training group (ITG) and control group (CG) on speed are graphically presented in figure 1.

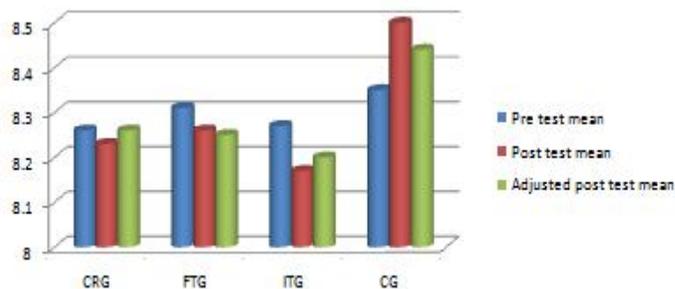


Figure 1: Bar diagram showing the pre, post and adjusted post test mean values of Continuous running group(CRG), Fartlek training group (FTG), Interval training group (ITG) and control group (CG) on speed

Table - III : Analysis of Covariance of data on Coordination between pre and post test of Continuous running group, Fartlek training group, Interval training group and control group

	CRG	FTG	ITG	CG	Sources of variance	Sum of square	df	Mean Square	'F' ratio
Pre -test									
Mean	15.62	15.60	15.66	15.46	B	0.330	3	0.110	0.398
SD	0.38	0.60	0.65	0.424	W	15.70	56	0.280	
Post -test									
Mean	14.79	14.59	14.54	15.63	B	11.65	3	3.88	19.73*
SD	0.38	0.45	0.51	0.41	W	11.01	56	0.197	
Adjusted post-test Mean	14.77	14.58	14.48	15.73	B	14.40	3	4.80	138.50*
					W	1.90	55	0.035	

*Significant at 0.05 level of confidence

(The table value required for significant at 0.05 level with df 3 and 56 & 3 and 55 are 2.77 and 2.77 respectively)

From the table III observed that the adjusted posttest mean values on coordination for Continuous running group (CRG), Fartlek training group (FTG), Interval training group (ITG) and control groups (CG) were 14.77, 14.58, 14.48 and 15.73 respectively. The obtained 'F' value of 138.50 for adjusted post test scores on coordination, which was higher than the table value of 2.77 for significance with df 3 and 55 at 0.05 level of confidence. The result of the study showed that there was significant difference among Continuous running group (CRG), Fartlek training group (FTG), Interval training group (ITG) and control group (CG) on coordination. Since the four groups were involved the Scheffe's post hoc test was applied to find out the paired mean differences if any, and it is presented in Table IV.

Table-IV : Scheffe's post hoc test for the differences between paired adjusted post test means of coordination

CRG	FTG	ITG	CG	MD	CI
14.77	14.58	-	-	0.19*	0.19
14.77	-	14.48	-	0.29*	
14.77	-	-	15.73	0.96*	
-	14.58	14.48	-	0.10	
-	14.58	-	15.73	1.15*	
-	-	14.48	15.73	1.25*	

*Significant at 0.05 level of confidence

The table IV Shows that the adjusted post test mean differences of Continuous training group (CRG) and Fartlek training group (FTG), Continuous running group (CRG) and Interval training group (ITG), Continuous running group (CRG) and Control group (CG), Fartlek training group (FTG) and Control group (CG) and Interval training group (ITG) and Control group (CG) were 0.19, 0.29, 0.96, 1.15 and 1.25 respectively. They were greater than the confidence interval value 0.19 at 0.05 level, which indicate that there is a significant differences among the group of Continuous running group (CRG) and Fartlek training group (FTG), Continuous running group (CRG) and Interval training group (ITG), Continuous running group (CRG) and Control group (CG), fartlek training group (FTG) and Control group (CG) and Interval training group (ITG) and control group (CG). The Comparison of pre, post and adjusted post mean values of Coordination for Continuous running group (CRG), Fartlek training group (FTG), Interval training group (ITG) and control group (CG) on Coordination are graphically presented in figure 3.

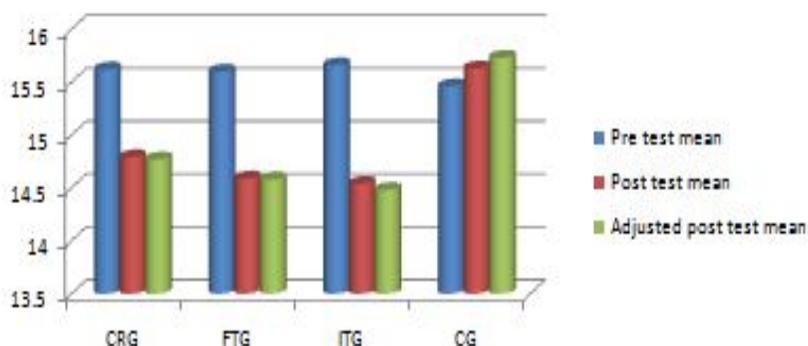


Figure 2: Bar diagram showing the pre, post and adjusted post test mean values of Continuous running group (CRG), Fartlek training group (FRG), Interval training group (ITG) and control group (CG) on Coordination.

Conclusion

Speed was significantly improved by the Continuous running group, Fartlek training group and Interval training group when compared with control group. Speed was significantly improved in Interval training group when compared with Continuous running group and Fartlek training group. There is no significant improvement in speed between Continuous running group and Fartlek training group. Coordination was significantly improved by the Continuous running group, Fartlek running group and Interval training group when compared with control group. Coordination was significantly improved by Interval running group when compared the Continuous running group and fartlek training group. Coordination was significantly improved by fartlek training group when compared with continuous running group.

References

- Clarke and Clarke (1989) Application of measurement of physical education, Saint Louis: Mosby year book Inc., p154.
- Daniel D. Arnheim (1985) Modern Principles of Athletic training, St. Louis: The Mosby College publishing Company, p.78.
- Edward L. Fox and Donald K. Mathews (1990) the Physiological basic of physical education and Athletics, New York: CBS College Publishing, p284.
- Claire, T (2004). "Yoga for men: Postures for health, stress-free living" The career press, Inc., Franklines Lakes, United state.
- Uppal.,A.K (2004), 'Physical fitness and wellness', Friend Publication, New Delhi.
- Dupont., et al., (2004), 'The effect of in-season, high-intensity interval training in soccer players', Journal Strength Cond Res. 18(3):584-9.
- Aguiar et al.,(2011), 'Effects of Intermittent or Continuous Training on Speed, Jump and Repeated-Sprint Ability in Semi-Professional Soccer Players', J Strength Cond Res. 25(5):1285-92.
- Jovanovic., et al., (2011). 'Effect of speed, agility, quickness training method on power performance in elite soccer players' J Strength Cond Res.25(5):1285-92.
- Shaher.,et al.,(2012), 'The effect of 40 m repeated sprint training on physical performance in young elite male soccer players', Serbian journal of sports sciences, 6(3): 111-116.
- Haghighi .,et al., (2012), 'Effects of plyometric versus resistance training on sprint and skill performance in young soccer players'. European Journal of Experimental Biology, 2 (6):2348-2351.
- Zakaria et al.,(2011), 'Effect of Using Fartlek Exercises on Some Physical and Physiological Variables of Football and Volleyball Players World', Journal of Sport Sciences 5 (4): 225-231.
- Zarezadeh- Mehrizi.,etal.,(2013), 'Effect of Traditional and Cluster Resistance Training on Explosive Power in Soccer Players Iranian', Journal of Health and Physical Activity, 4(1), 51-56.
- Ahmed., et al.,(2011), 'Effects of Fartlek training on selected physical fitness and Physiological variables among college football players', World Journal of Sport Sciences 5 (4): 225-231.
- Ramesh (2012)., 'Effects of Fartlek training on selected physical fitness and Physiological variables among college football players', International Journal of Physical Education, Sports and Yogic Sciences.