



Effect of fartlek training and circuit training on explosive power among men kho-kho players

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Abstract

The present study explores the impact of 12 weeks Fartlek training and Circuit training on explosive power among men kho kho players. district, state, inter collegiate, inter university and national level and international participated male kho kho players chosen from kho kho academy at J Panguluru, Inkollu Mandal, Prakasam district, Andhra Pradesh, India. The chosen N=33 kho kho player's age ranged from 17-24 years as per their academy record. The chosen male kho kho players randomly and equally distributed n=11 into 3-groups namely Fartlek training group [FLTG=11], Circuit training group [CTG=11] and control group [CONG=11]. All the three groups' kho kho players' measurement on explosive power parameter score were collected in the beginning and after the 12-weeks of fartlek training and circuit training. The collected measurement of explosive power parameter was analyzed by analysis of covariance to find the significant in pretest and posttest mean and adjusted posttest means found significant post hoc pair wise comparison was applied by scheffe's post hoc test at 0.05 fixed level of confidence by used statistical package of the social science. The present study found that standing broad jump performance test distance significantly increased in treatment groups namely FLTG [Fartlek Training Group] and CTG [Circuit Training Group] kho kho players when comparison between pre score and post score on explosive power. Further it was concluded that CTG kho kho players shown best performance in standing broad jump when comparison with FLTG kho kho players and CONG [Control group] kho kho players.

Keywords: fartlek, circuit training, explosive power and kho kho players

Introduction

Physical Education and Sports is a keen area which needs many kinds of training means and methods to improve the overall performance of the sports person. A mission for perfection is often confronted with numerous difficulties. An athlete's contribution of determination, commitment and long periods of training can lead to the accomplishment of the most extreme execution. To improve the sports performance the athlete needs to take part in systematic training by the way of scientific method of training. Therefore athletes or players need proper systematic training to improve their performance through different kinds of training- Gould & Carson.

Fartlek is a great training tool. Fartlek means "speed-play" and is very effective in increasing a runner's speed and endurance. The running involves the fluctuation of force indicated by the necessity of the athlete and the wavy surfaces and edges of landscape. It strengthens the endurance by maintaining proper balance in ankle, knee and hip. Anaerobic periods facilitate the VO₂ maximum in similar to the alternating pace method.

The sports scientist RE. Morgan and GT Adamson invented circuit training in the year 1953. Circuit training exercises designed to develop muscular strength, muscular endurance, muscular power, coordination, speed and agility, cardiovascular endurance and flexibility of the players. In circuit training usually six to twelve exercises station were

planned. The athlete's perform each exercise as per the fix repetition and time before moving to the next station of exercises and idea of the athletes to move next station as fast as possible.

Explosive power

The ability of the kho kho players to produce greater amount of force quickly with combination of strength and speed. [<https://www.google.com/search> EPmumi2AU&q=Explosive+power+in+sports+ppt&oq=Explosive+power+in+sports+ppt&]

Method and Procedure

To achieve the purpose of this research the investigator chosen total N=33 district, state, inter collegiate, inter university and national level and international participated male kho kho players chosen from kho kho academy at J Panguluru, Inkollu Mandal, Prakasam district, Andhra Pradesh, India. The chosen kho kho player's age ranged from 17-24 years as per their academy record. Total N=33 kho kho players selected randomly and distributed into 3-groups equally n=11. Treatment group 'A' Fartlek training [FLTG=11 kho kho players], treatment group 'B' treated with Circuit training [CTG=11 kho kho players] and control group [CONG=11 kho kho players] participated only their regular activities.

The twelve weeks training schedule planed on the base of

progressive load method. Every fourth week load has increased in total time duration, number of exercises, repetitions and sets. The twelve week training schedule of Fartlek training and circuit training schedule plan for chosen kho kho players. This event measure the legs explosive power of kho kho players. The kho kho player stand behind the take off line in half squat position and jump forward. Three trails are permitted and the best trails jump will measure. The distance will recorded in meters from starting line to the landing in the pit. The score were collected from three groups kho kho players namely fartlek training group[FLTG], circuit training group [CTG] and no training group [CONG] on explosive power parameter of men kho kho players beginning and after the end of 12-weeks Fartlek training and Circuit training. During the treatment period the three group’s kho kho players not allowed to participate in any specific training apart from their regular exercises program. The collected score from fartlek Training group, circuit training group and control group kho kho players beginning

and after the treatment period were statistically analyzed by analysis of covariance [ANCOVA] with the software SPSS to find the significant. Where ever the adjusted post test mean ‘F’ value found significant, Scheffe’s post hoc test formula applied to find the significant changes between three groups fartlek training group, circuit training group and control group.

Data Analysis and Results

To achieve the purpose of this study researcher investigated the influence of 12-weeks Fartlek training and circuit training on explosive power parameter of kho kho players. The collected measurement of explosive power parameter was analyzed by analysis of covariance to find the significant in pretest and post test mean. If the adjusted post test means found significant post hoc pair wise comparison was applied by scheffe’s post hoc test at 0.05 fixed level of confidence. The calculations of explosive power parameters analysis by statistical package of the social science in table1

Table 1: Analysis of covariance for pre-test post-test and adjusted post-test score of FLTG CTG and CONG on explosive power [In meters]

Tests	FLTG	CTG	CONG	Source of variance	Sum of Squares	df	Mean Squares	‘F’ Ratio
Pre Test	2.23	2.22	2.25	B	.007	2	.003	1.04
Mean SD	0.03	0.04	0.07	W	0.10	30	.003	
Post Test	2.31	2.42	2.19	B	0.24	2	0.12	4.37*
Mean SD	0.07	0.03	0.06	W	0.09	30	.003	
Adjusted Post	2.32	2.43	2.20	B	0.33	2	0.16	19.48*
Test Mean				W	0.25	29	0.008	

*Significant at 0.05 level of confidence (Required table value at 0.05 level of significant with df 2 and 30 is 3.31 and df 2 and 29 is 3.32)

The above table display the pre-test, post-test and adjusted post-test mean values and ‘F’ values of FLTG[Fartlek training group], CTG [Circuit training group] and CONG [Control group] kho kho players on explosive power [In meters].

The pre-test mean values of FLTG, CTG and CONG kho kho players on explosive power are 2.23, 2.22 and 2.25 respectively. The calculated F-value for pre-test score on explosive power was 1.04 which is lesser than the table value 3.31 with df 2 and 29 at 0.05 level of confidence. This indicate that there is no significant differences between the FLTG, CTG and CONG kho kho players in mean values on explosive power.

The post-test mean values of FLTG, CTG and CONG kho kho players on explosive power were 2.31, 2.42 and 2.19 respectively. The calculated F-value for post-test score on explosive power was 4.37 which is higher than the table value 3.31 with df 2 and 29 at 0.05 level of confidence. This indicate that there is significant differences between the FLTG, CTG and CONG kho kho players in mean values on explosive power.

The adjusted post-test mean values of FLTG, CTG and CONG kho kho players on explosive power were 2.32, 2.43 and 2.20 respectively. The calculated F-value for adjusted post-test score was 19.48 which is greater than the table value 3.32 with df 2 and 29 at 0.05 level of confidence. This indicate that there is significant differences between the FLTG, CTG and CONG kho kho players in mean values on explosive power. The result of this study proved that two treatment groups namely FLTG and CTG kho kho players standing board jump performance significantly increased with the specific

experimental treatment [fartlek training and circuit training]. This indicates that significant differences exist in mean values of adjusted post-test among three groups kho kho players. Therefore scheffe’s post hoc test was applied to find the result of significant differences among three groups on explosive power presented in the table 2

Table 2: Scheffe’s test for paired adjusted final mean differences between FLTG, CTG and CONG on explosive power [In meters]

Mean Values			Mean difference	CI
FLTG	CTG	CONG		
2.32	2.43	-	0.11*	0.05
2.32	-	2.20	0.12*	
-	2.43	2.20	0.23*	

*Significant at 0.05 level of confidence

The above table indicated the paired adjusted final mean differences between FLTG [Fartlek training group kho kho players], CTG [Circuit training group kho kho players] and CONG [Control group kho kho players] on explosive power [In meters] were 0.11, 0.12 and 0.23 which is higher than the critical difference value 0.05 required for significant at 0.05 level of confidence.

The result on explosive power found that CTG kho kho players training program is more effective to enhance their explosive power performance when comparison with FLTG kho kho players training program and CONG kho kho players. The pre-test, post-test and adjusted post-test mean values of explosive power are graphically presented line graph figure.

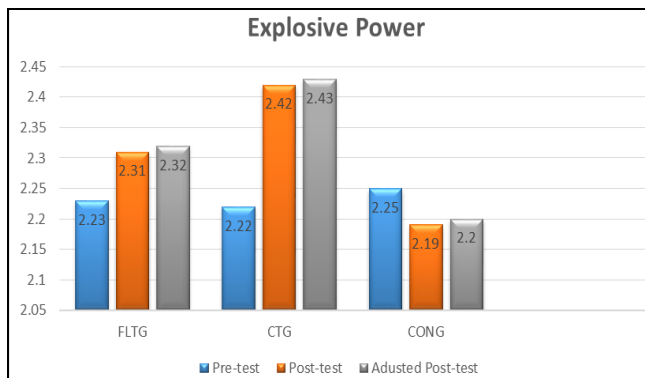


Fig 1: The graphical illustration of Pre-test, Post-test and adjusted Post-test mean values on explosive power [In meters] for FLTG, CTG and CONG kho kho players.

Discussion

This study shown that kho kho player's explosive power performance level increased in standing broad jump with the training effect of fartlek training and circuit training. The list of studies related to explosive power Mario *et al.*, (2011) study proved circuit treatment appeared to be effective to improve the explosive power performance of soccer player. Moktar *et al.*, (2008) result shown that concurrent training and circuit training induced significant increase in performance level of explosive power of physical education students. Raj and Harish (2005) study confirm that 6-weeks of plyometric circuit treatment exercises is more effective to improve jumping abilities of female college players. Rabin and Kaleeswaran (2018) study proved that complex training increased explosive power performance level of male hockey players.

Conclusion

The study shows that FLTG and CTG kho kho players in standing board jump performance test covered greater distance when comparison between initial score and post score. Further it was confirmed that Circuit training is more beneficial to increase the explosive power of legs in CTG kho kho players when comparison with FLTG kho kho players training program and CONG [Control group] kho kho players.

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