International Journal of Physiology, Sports and Physical Education
www.physicaleducationjournal.net
Online ISSN: 2664-7729, Print ISSN: 2664-7710
Received: 21-08-2021, Accepted: 06-09-2021, Published: 21-09-2021
Volume 3, Issue 1, 2021, Page No. 24-26

Effect of fartlek training and circuit training on resting pulse rate among men kho-kho players

Jaya Rao Palaparthi[1], Dr. P Johnson[2]

[1] Ph.D. Research Scholar, University College of Physical Education and Sports Scienses, Acharya Nagarjuna University, Guntur, Andhra Pradesh, India

[2] Associate Professor University College of Physical Education and Sports Scienses, Acharya Nagarjuna University, Guntur, Andhra Pradesh, India

DOI: https://doi.org/10.33545/26647710.2021.v3.i1a.24

Abstract

The present study explores the impact of 12 weeks Fartlek training and Circuit training on resting pulse rate 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 resting pulse rate parameter score were collected in the beginning and after the 12-weeks of fartlek training and circuit training. The collected measurement of resting pulse rate 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 resting pulse rate Manual method (radial of the wrist) performance test in numbers significantly reduce 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 resting pulse rate. Further it was concluded that FLTG kho kho players shown best performance on resting pulse rate when comparison with CTG kho kho players and CONG [Control group] kho kho players.

Keywords: fartlek, circuit training, resting pulse rate and kho kho players

Introduction

Sports training include the readiness of a sportsman to attain the highest level of execution. To enhance execution, one must undergo various training methods on a frequent, efficient and systematic basis. Mere execution of exercises does not ensure improvement of performance. Actual effect of training depends upon several factors such as training loads, means of recovery, assessment of load and performance capacity, sports equipment, nutrition, psychological characteristics and method adopted for imparting theoretical instruction- Sharma, Balamurugan, Pandey, Saha & Mehra.

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 R.E. Morgan and G.T. 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.

Resting pulse rate

Arteries have elastic walls and stretch as the blood flow through the vessels for this reason we felt pulse. The location of pulse Carotid artery and radial artery.

[https://www.slideshare.net/stuzarazun/cardiovascular-endurance]

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. The investigator recorded the resting pulse rate [manual method] by placing the fingertips on the radial artery and thumb finger on side of the wrist of kho kho players. The number of beats felt in 6 second by the investigator is converted into 60 seconds beats per minutes by using formula number of beats felt in 6 second multiplied by 10 to get number of beats per minutes. The score was recorded in numbers of each kho kho players. 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 resting pulse rate 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 resting pulse rate parameter of kho kho players. The collected measurement of resting pulse rate 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 resting pulse rate 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 resting pulse rate [in numbers]

Tests	FLTG	CTG	CONG	Source of variance	Sum of Squares	df	Mean Squares	'F' Ratio
Pre Test								
Mean	62.54	62.36	63.81	B	13.81	2	6.90	2.18
SD	2.23	0.92	1.83	W	94.90	30	3.16	
Post Test								
Mean	57.45	61.18	66.27	B	431.09	2	215.54	33.93*
SD	2.87	0.98	3.13	W	190.54	30	6.35	
Adjusted								
Post Test	57.50	61.27	65.64	B	386.82	2	193.41	73.42*
Mean				W	73.31	29	2.29	

*Significant at 0.05 level of confidence (Required table value at 0.05 level of significant with df 2 and 30 is 3.31and 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 kho kho players], CTG [Circuit training group kho kho players] and CONG[Control group kho kho players] on resting pulse rate [In numbers].

The pre-test mean values of FLTG, CTG and CONG on resting pulse rate are 62.54, 62.36 and 63.81 respectively. The F-value for pre-test score on resting pulse rate was 2.18 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 in mean values on resting pulse rate.

The post-test mean values of FLTG, CTG and CONG kho kho players on resting pulse rate were 57.45.18, 61.18 and 66.27. The calculated F-value for post-test score on resting pulse rate was 33.93 which is greater 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 resting pulse rate.

The adjusted post-test mean values of FLTG, CTG and CONG kho kho players on resting pulse rate were 57.50, 61.27 and 65.64. The calculated F-value for adjusted post-test score was 73.42 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 in mean values on resting pulse rate. The result of this study proved that two treatment groups namely FLTG and CTG kho kho players resting pulse rate [radial artery of wrist] significantly reduce with specific experimental treatment [Fartlek training and Circuit training].

This indicates that significant differences exist in mean values of adjusted post-test among three group's kho kho players. Therefore scheffe's post hoc test was applied to find the result of significant differences among three groups on resting pulse rate presented in the table 2

Table 2: Scheffe's test for paired adjusted final mean differences between fltg, ctg and cong on resting pulse rate [in numbers]

Mean Values			Mean difference	CI
FLTG	CTG	CONG		
57.50	61.27	-	3.77*	0.92
57.50	-	65.64	8.14*	
-	61.27	65.64	4.37*	

*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 resting pulse rate [In numbers] were 3.77, 8.14 and 4.37 which is higher than the critical difference value 0.92 required for significant at 0.05 level of confidence.

The result of this study on resting pulse rate found that FLTG kho kho players training program is more effective to reduce the resting pulse rate performance when comparison with CTG kho kho players training program and CONG kho kho players.

The pre-test, post-test and adjusted post-test mean values of resting pulse rate are graphically presented line graph figure

Figure

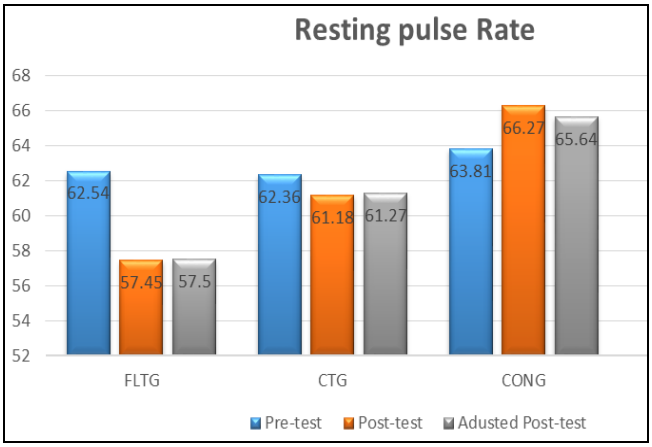

Fig 1: The graphical illustration of Pre-test, Post-test and Adjusted Post-test mean values on resting pulse rate [In numbers] for FLTG, CTG and CONG kho kho players.

Discussion

This study found that radial artery resting pulse rate number of kho kho players reduce with the treatment of fartlek training and circuit training. The studies referred connected to resting pulses rate were Kuljinder and Nishan (2015) found that after fartlek training the experimental group soccer players has significant progressive improvement on resting pulse rate. Gurvir and Baljeet (2017) study suggested that fartlek and plyometric drill exercises program is an excellent method to reduce the resting pulse rate of the kho kho players. Sandip and Gopa (2013) study suggested that the intensive training and extensive treatment had a positive effect to reduce the resting pulse rate of the women. David and Paul (2013) result indicated of isolated and combined training of weight and plyometric training significantly reduce the resting pulse rate of college men.

Conclusion

The study discovered that resting pulse rate significantly reduce with the impact of Fartlek training and Circuit training on experimental groups namely FLTG and CTG kho kho players when comparison between pre score and post score. Further it was confirmed that fartlek training program is more effective to decrease the resting pulse rate number when comparative with circuit training program and CONG [Control group] kho kho players.

Reference

1. Brown LE, Ferrigno VA. Training for circuit (2nded). Champaign: USA: Human Kinetics, 2005.
2. Clarke H, Clarke DH. Application of Measurement in Physical Education, (6th Ed.), Englewood Cliffs, New Jersey, U.S.A: Prentice Hall Inc, 1987, 63.
3. Gianetti G, Burton L, Donovan R, Allen G, Pescatello LS. "Physiologic and psychological responses of an athlete cycling 100+miles daily for 50 consecutive days". Curr Sports Med Rep,2008:7:343-347.
4. Singh Nandalal T, Singh B. Effects of twelve weeks circuit training on selected physiological variables among school athletes. Peer Reviewed multi-desciplinary International Journal,2015:02:06.
5. Senthikumar p. Effects of isolated and combined circuit and Strength training on selected physical, physiological, blood lipids and skill performance variables of intercollegiate men football player. Unpublished Ph.D. Thesis. Bharathiar University, Coimbatore, Tamilnadu, India, 2015.
6. Juliance. Evaluated the influence of fartlek and circuit training program on agility, 2016.
7. Gursharan. Measured the fartlek treatment and Plyometric treatment on speed among handball players, 2019.
8. Rajesh J effect of SAQ training and Circuit training on selected motor, physiological and skill related performance on men hockey players, Acharya Nagarjuna University, Guntur, Andhra Pradesh, India, 2020.
9. Daniel *et al*, evaluated the impact of circuit training exercises for 8-weeks on muscular endurance and cardio vascular endurance for school children, 2013.