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EFFECT OF CONTINUOUS RUNNING, FARTLEK AND INTERVAL TRAINING ON SELECTED PHYSIOLOGICAL VARIABLE OF MALE FOOTBALL PLAYERS.

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ABSTRACT

*The present study was undertaken to analyze the study was to find out the Effect of Continuous running, Fartlek and Interval training on selected Physiological variable(**Vital capacity)** of male football players.The investigator has selected sixty inter collegiate football men players at random, their age ranged from 18-25 years. The subjects chosen for the study were divided into four equal groups and designated as experimental group 'A' experimental group 'B' experimental group 'C' and control group 'D'. Continuous running were given to group 'A' Fartlek training group 'B' Interval training given to group 'C' and the control group 'D' were restricted to participate in any activities. The trainings were given for a period of twelve weeks. The data were collected before and after the training. The obtained data's were analyzed by Analysis of Covariance (ANCOVA). The level of significant was fixed at 0.05 levels. Where ever the 'F' ratio was found significant scheffe's post test was used for find out the significant differences among the paired mean. The results of the study showed that continuous running, fartlek training and interval training are significantly improved than control group.*

Keywords: Continuous running, Fartlektraining, Interval training, Vital capacity

INTRODUCTION

Continuous training as the name implies, involves continuous activity, without rest intervals. This has varied from high intensity, Continuous activity of moderate duration to low-intensity activity of an extended duration, i.e. long, slow distance, or 'LSD" training. LSD

training is probably the most widely used from of endurance conditioning for jogger who want to stay in condition for health-related purpose, the athlete who participate in team sports and endurance-trains for general condition, and the athlete who wants to maintain his endurance condition during the off-season. ***Ajmer Singh et al., (2003)***

Fartlek training is running with carious intensity according to requirement of the athlete and dictates of the terrain. The athlete will use a terrain which undulates and makes varying demands upon him. (Ex. Hills, Woodland, Ploughed land, sand) like the alternating pace method, anaerobic period provides a sting stimulus for the improvement of VO_2 maximum. In addition, the demands of terrain stimulate strength endurance development and proprioceptive balance adjustment of ankle, knee and hip. ***(Dick 1980)***

Interval training is a form of progressive conditioning in which the intensity of the activity, the duration of each bout. The Number of bouts, the time or kind of resting period between bouts, on the order of the bouts is varied **Baby (1927).** According to **Mathews and Fox (1974),** Interval training as work or exercise followed by the property of prescribed relief interval.

Physiology

Physiology, fitness which may be termed as training effect is achieved through exercise or activates that promote the use of oxygen to burn fuel in working muscles. The components of physical fitness are strength, cardiovascular endurance, speed, agility, power, flexibility, balance and coordination **(Gelding and Boss 1976).** According to **Withers (1982)** During competitive soccer match play, elite players cover a distance of about 10–12 km. According to **Gool (1988)** at an average intensity close to the anaerobic threshold, being 80–90% of maximal heart frequency (Hf_{max}) or 70–80% of maximal oxygen uptake (Vo_{2max}). According to **Bangsbo (1994)** It is estimated that aerobic metabolism provides 90% of the energy cost of soccer match play. Therefore, it is a prerequisite in the modern game for the elite soccer player to have high aerobic endurance fitness. Although each of these sports has its own distinctive skills, tactics and movement patterns, they all have similar physiological demands such as high aerobic power, high lactate tolerance and increased anaerobic capacity **(Bangsbo 2000)**. These physiological

capacities allow the team-sport player to repeat sprints often with quite short recovery periods over a prolonged duration. This type of activity is commonly referred to as Prolonged High-Intensity Intermittent Exercise.

Vital capacity,

This is the volume of gas that can be expelled from the lungs following a maximal inspiration. Trained athletes can expel 5.79 liters: untrained males of the same can expel 4.8 liters **(Mathew and Fox 1980).**

Statement of the problem

The purpose of the study was to find out the Effect of Continuous running, Fartlek and Interval training on selected Physiological variable(**Vital capacity)** of male football players.

METHODOLOGY

The purpose of the study was to find out the Effect of Continuous running, Fartlek and Interval training on selected Physiological variable(**Vital capacity)** of male football players**..** To achieve the purpose of this study sixty inter collegiate football men players were selected at random from in and around the Guntur district Andhra Pradesh. Their age ranged from 18 to 25 years. The subjects chosen for study was divided into four groups and designated as experimental group A, experimental group B, experimental group C and control group D. Each groups consisted of fifteen players. Continuous running was given to group A, Fartlek training given to group B, Interval training given to group C and control group C was restricted to participate in any of the training programme other than their regular activities. Training was given three days in a week for twelve weeks. The subject were tested on at the **Vital capacity,** beginning (Pre-test) and at the end of the experimental period (Post-test). To measure the**, Vital capacity, Respiratory pressure** respectively because of their simplicity and availability of necessary facilities, instrument and equipment's.

Vital capacity (Respiratory pressure)

Purpose :-The purpose of the test was to find out the lungs capacity of individual

Equipment Used:-Equipment used Respiratory flow meter

Procedure:-First make sure you have no food or gum in your mouth and stand up. Put the pointer on the gauge of the peak flow meter at 0. Attach the mouth piece to the peak flow meter. Take a deep breath, then place the peak flow meter mouth piece in your mouth and close your lips tightly around the outside of the mouth piece (Don't put your tongue inside the mouth piece). Breath out as hard and as fast as possible using a Huff rather than full breath out). Expire the air forcefully out, then place the peak flow meter mouth piece in your mouth and close your lips tightly around the outside of the mouth piece (Don't put your tongue inside the mouth piece). Breathe in hard and as possible. Record the value on the gauge before moving the pointer on the gauge back to 0. At least three attempts should be performed.

Scoring:-Record the highest value of all attempts. The value recorded is peak expiratory floe (PEF) in liters per minute. **Mathews Donald K. 1968.**

RESULT AND DISCUSSION

The analysis of data on **Vital capacity** has been examine by ANCOVA for variables separately in order to determine the differences if any among the group at pre and post test when the differences was found to be significant by ANCOVA, the Scheffe's post hoc test was applied to assess the significant differences between the adjusted mean.

Table- I

Analysis of Covariance of data on Vital capacity 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	1.88	1.89	1.88	1.88	B	0.002	3	0.001	0.29*
SD	0.04	0.04	0.14	0.05	W	0.123	56	0.002	

Post- test Mean SD	2.01 0.05	2.01 0.04	2.02 0.04	1.83 0.05	B W	0.371 0.127	3 56	0.124 0.002	54.40*
Adjusted post-test Mean	2.01	2.01	2.02	1.83	B W	0.350 0.050	3 55	0.117 0.001	129.26*

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 table I Shows that the pre test mean values on Vital capacity for Continuous running group (CRG), Fartlek training group (FTG), Interval training group (ITG) and control groups (CG) were 1.88, 1.89, 1.88 and 1.88 respectively. The obtained 'F' value of 0.29 for pre test scores on vital capacity, which was lesser than the table value of 2.77 for significance with df 3 and 56 at 0.05 level of confidence.

The post test mean values on vital capacity for Continuous running group (CRG), Fartlek training group (FTG), Interval training group (ITG) and control groups (CG) were 2.01, 2.01, 2.02 and 1.83 respectively. The obtained 'F' value of 54.40 for post test scores on vital capacity, which was greater than the table value of 2.77 for significance with df 3 and 56 at 0.05 level of confidence.

The adjusted post test mean values on vital capacity for Continuous running group (CRG), Fartlek training group (FTG), Interval training group (ITG) and control groups (CG) were 2.01, 2.01, 2.02 and 1.83 respectively. The obtained 'F' value of 129.26 for adjusted post test scores on vital capacity, 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 groups (CG) on vital capacity.

Since the 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 vital capacity

CRG	FTG	ITG	CG	MD	CI
2.01	2.01	-	-	0.00	0.03
2.01	-	2.02	-	0.01	
2.01	-	-	1.83	0.18*	
-	2.01	2.02	-	0.01	
-	2.01	-	1.83	0.18*	
-	-	2.02	1.83	0.19*	

Significant at 0.05 level of confidence

The table II Shows that the adjusted post test mean differences of 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 0.18, 0.18 and 0.19 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 Control group (CG), Fartlek training group (FTG) and Control group (CG) and Interval training group (ITG) and control group (CG).

The adjusted mean difference of Continuous running group (CRG) and fartlek training group (FTG), Continuous running group (CRG) and Interval training group (ITG) and Fartlek training group (FTG) and Interval training group (ITG) were 0.00, 0.01 and 0.01 respectively. Hence it shows that they were lesser than the confidence interval value 0.03 at 0.05 levels, which indicate that there is no significant differences exist among the group of Continuous running

group (CRG) and fartlek training group (FTG), Continuous running group (CRG) and Interval training group (ITG) and Fartlek training group (FTG) and Interval training group (ITG).

The Comparison of pre, post and adjusted post mean values of vital capacity for Continuous running group (CRG), Fartlek training group (FTG), Interval training group (ITG) and control group (CG) on vital capacity are graphically presented in figure I.

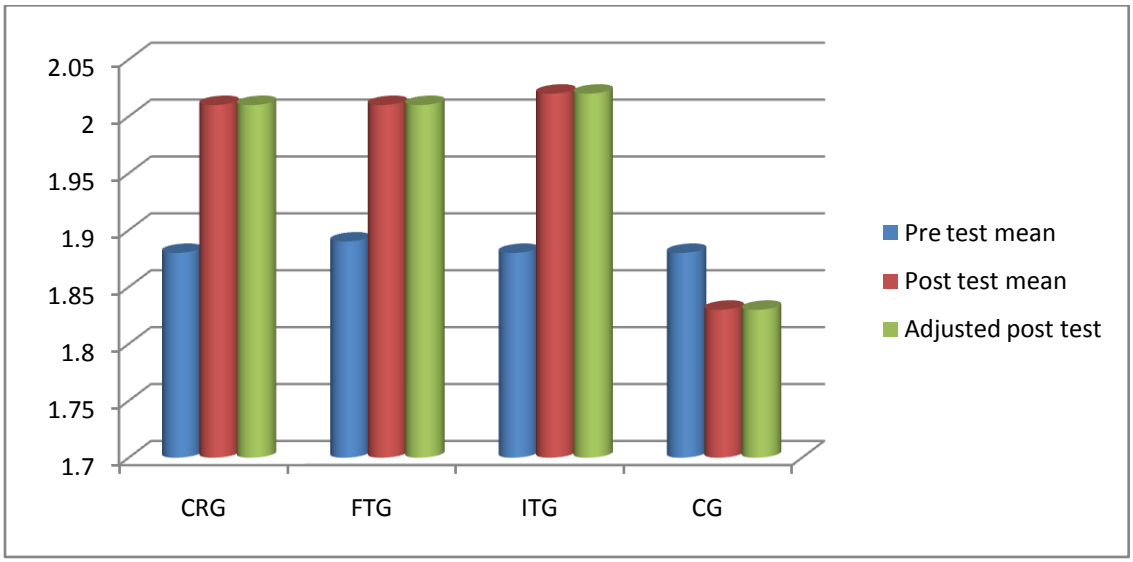

Figure I: Bar diagram showing the pre, post and adjusted post test mean values of Continuous running group (CRG), Fartlek training group (FTG), Interval training group (ITG) and control group (CG) on Vital capacity.

DISCUSSING ON FINDINGS

Vital Capacity

The result of the study reveals that due to the effect of continuous fartlek and Interval training significantly improved the vital capacity when compared with control group. These finding were also in agreement with the following studies **Kouilla (2009)** high intensity training result in significant improvement in vital capacity. **Hojati and Rajesh (2013)** in their study result showed that interval aerobic training significant improvement on forced expiratory vital capacity. **Ahmad Azad (2011)** aerobic exercise training significantly improved lung capacity.

Discussion on hypotheses

1. In the second hypothesis it was stated that there would be significant improvement on selected physiological variable. The result of the study shows that due to the effect of continuous training, fartlek training and interval training on selected physiological variable such as, vital capacity has significantly improved. Hence it was concluded that research hypothesis has been accepted and null hypothesis has been rejected. Hence the research hypothesis has been rejected and null hypothesis has been accepted.

Conclusions

Vital capacity was significantly improved by the Continuous running group, Fartlek training group and Interval training group when compared with control group.

There is no significant improvement in Vital capacity between Continuous running group, Fartlek training group and Continuous running group

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