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## Effect of aerobic training on selected physical fitness variables among intercollegiate kabaddi players

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### Abstract

The purpose of the study was to find out the effect of aerobic training on selected physical fitness variables among intercollegiate kabaddi players. Thirty intercollegiate kabaddi players studying from St. John's College of Physical Education, Veeravanallur were selected randomly as subjects. The age of the subjects ranged from 19 to 28 years. The selected subjects were divided into two groups. Group I underwent aerobic training and Group II acted as control. The experimental group (aerobic training) was subjected to the aerobic training for five days a week up to six weeks. The aerobic training was selected as the independent variable and the criterion variables cardiovascular endurance and muscular endurance were selected as dependent variables and the selected dependent variables were assessed by the standardized test items. Cardiovascular endurance was assessed by 12 min Cooper's run/walk test and the unit of measurement in meters, and muscular endurance was assessed by bent knee sit ups test and the unit of measurement in numbers. The experimental design selected for this study was pre and post test randomized design. The data were collected from each subject before and after the training period and statistically analyzed by using dependent 't' test and analysis of covariance (ANCOVA). It was found that there was a significant improvement and significant difference existed due to the effect of aerobic training on cardiovascular endurance and muscular endurance.

**Keywords:** Aerobic training, physical fitness variables, intercollegiate kabaddi players

### Introduction

Aerobic exercise is any physical activity that makes you sweat, causes you to breathe harder and gets your heart beating faster than at rest. It strengthens your heart and lungs and trains your cardiovascular system to manage and deliver oxygen more quickly and efficiently throughout your body. Aerobic exercise uses your large muscle groups, is rhythmic in nature and can be maintained continuously for at least 10 minutes. (Google, 2014)

In general, physical fitness refers to one's ability to perform physical tasks, especially as they relate to a sport or occupation; however, because physical fitness encompasses a wide variety of abilities, it means different things to different people. The main categories of physical fitness are aerobic endurance, muscular endurance, strength, speed, power and flexibility. (Google, 2014)

Kabaddi is a team game. Two teams, each having 7 in-court players, compete with each other to get higher scores. Individual brilliance is exhibited when a player raids the opponent's court. The team spirit, the team togetherness and team strategy comes into play when an opponent raider enters your court. The most important player requirement is stamina and lungpower. You should be able to keep your breath for a long time without any break in between. (Google, 2014)

### Methodology

To achieve the purpose, thirty intercollegiate kabaddi players studying from St. John's college of Physical Education, Veeravanallur were selected randomly as subjects. The age of the subjects ranged from 19 to 28 years. They were assigned randomly into two groups (group I) underwent aerobic training and (group II) acted as control of twelve subjects each. The experimental group was subjected to the aerobic training during morning hours for five days a week up to six weeks and group II acted as control. The aerobic training was selected as the independent variable and the criterion variables cardiovascular endurance and muscular

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endurance were selected as dependent variables and the selected dependent variable were assessed by the standardized test items. Cardiovascular endurance was assessed by 12 min cooper's run/walk test and the unit of measurement in meters, and muscular endurance was assessed by bent knee sit ups and the unit of measurement in numbers. The experimental design selected for this study was pre and post test randomized design. The data were collected from each subject before and after the training period and statistically analyzed by using dependent 't' test and analysis of covariance (ANCOVA).

## Results and discussions

The data pertaining to the variables in this study were examined by using dependent 't' test to find out the significant improvement and analysis of covariance (ANCOVA) for each variables separately in order to determine the difference and tested at .05 level of significance. The analysis of dependent 't' test on data obtained for cardiovascular endurance, and muscular endurance of the pre test and post test means of experimental and control group have been analyzed and presented in Table 1.

**Table 1:** Mean and dependent 't' test of experimental and control groups on selected variables

Variables	Mean	Aerobic Training	Control Group
Cardiovascular Endurance	Pre test Mean	2412.0	2416.0
	Post test Mean	2447.0	2415.2
	't' test	8.40*	1.19
Muscular Endurance	Pre test Mean	34.8	34.67
	Post test Mean	36.7	34.40
	't' test	16.36*	1.47

\*Significant at 0.05 level of confidence (11) = 2.16

The obtained 't' ratio value on cardiovascular endurance and muscular endurance of experimental group is higher than the table value, it is understood that the aerobic training has made significant improvement on cardiovascular endurance and muscular endurance. However, the control group has not made significant improvement as the obtained 't' value is less

than the table value; because it was not subjected to any specific training. The analysis of covariance on the data obtained on cardiovascular endurance and muscular endurance due to the effect of aerobic training and control groups have been analysed and presented in Table 2.

**Table 2:** Analysis of covariance of experimental and control groups on selected variables

Variables	Adjusted Post Test Means		Source of Variance	SS	DF	Mean Squares	'F'- Ratio
	Aerobic Training	Control Group					
Cardiovascular Endurance	2449	2413	Between	9482.90	1	9482.90	80.88*
			Within	3165.63	27	117.25	
Muscular Endurance	36.67	34.46	Between	36.47	1	36.47	104.54*
			Within	9.42	27	.349	

\*Significant at .05 level of confidence, df (1, 27) = 4.21

Table 2 shows that the obtained 'F' ratio value are 80.88 and 104.54 which are higher than the table value 4.21 with df 1 and 27 required to be significant at 0.05 level. Since the obtained value of 'F' ratio are higher than the table value, it indicates that there is significant difference has made among the adjusted post- test means of aerobic training group and control group on cardiovascular endurance and muscular endurance.

The aerobic training may influence the significant difference on cardiovascular endurance and muscular endurance.

## Conclusions

1. The aerobic training had significantly improved the cardiovascular endurance and muscular endurance.
2. There was significant difference among the adjusted post – test means of aerobic training and control group on cardiovascular endurance and muscular endurance.

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