

**ANALYSIS OF THE CHANGES ON GAME SPECIFIC FITNESS COMPONENTS
AND PHYSIOLOGICAL PARAMETERS IN RESPONSE TO CONCURRENT
TRAINING AMONG RURAL AND URBAN CRICKET PLAYERS**

Ganapathi Viswanadham

Research Scholar, Department of Physical Education, Annamalai University, Chidambaram,
Tamilnadu, Ganapathi.viswa1985@gmail.com

Dr.S.Alagesan

Associate Professor, Department of Physical Education, Annamalai University,
Chidambaram, Tamilnadu, salagesan1972@gmail.com

ABSTRACT

The present study is to find out the analysis of the changes on game specific fitness components and physiological parameters in response to concurrent training among rural and urban cricket players. 30 male players who have represented the zonal level were selected from rural and urban area Chidambaram, Tamil Nadu. The age of the subjects range from 20 to 24. They were divided into two groups of fifteen in each. One group was act as the experimental group and another was as control group. The experimental group was undergoing the concurrent training for 12 weeks 3 days per week. Each training session was for one hour in the evening from 4.00 PM to 5.00 PM. To achieve the result, the collected data on following criterion measures namely specific fitness components that is cardio respiratory endurance and physiological parameters that is forced vital capacity. The standardized tests were taken before and after the concurrent training. Cardio respiratory endurance was tested using cooper's 12 minutes run/walk and forced vital capacity was tested using spirometer. The paired 't' test were applied to analyzed the collected data and in all cases the criteria for the statistical significance will be set at 0.05 level of confidence.

INTRODUCTION

Cricket has a great and long tradition. It is a game with a proud history, but also a game without a training culture. It has often been said that to get fit for Cricket one should play Cricket. This has always been enough in the past for Cricketers at all levels and is perhaps a sound base on which to develop a player's level of fitness. However, in recent years modern Cricket has woken up to the benefits of well trained and conditioned athletes. Even more recently, the advent of Cricket-specific training is producing stronger, faster and more agile players than ever before.

Incorporating both endurance and resistance training into an exercise regime is termed concurrent training. While there is evidence that concurrent training can attenuate resistance training-induced improvements in maximal strength and muscle hypertrophy, research findings are often equivocal, with some suggesting short-term concurrent training may instead further enhance muscle hypertrophy versus resistance training alone. Working on strength and endurance at the same time, whether be in the same session, alternative days, alternative

sessions, etc. Countless numbers of recreational workout enthusiasts complete their strength and endurance training workouts during the same training session, or within hours of one another. Many people, athletes and non-athletes, take part in a combination of resistance and endurance training. These people are expecting to experience the benefits that these two different types of training have to offer. A number of studies have shown that performing these two types of training simultaneously can be detrimental to the gains that might be made in performing one type of training alone (Bell *et al.*, 2000).

STATEMENT OF THE PROBLEM

The present study was to find out the analysis of the changes on game specific fitness components and physiological parameters in response to concurrent training among rural and urban cricket players.

DELIMITATIONS

The following delimitations are considered for the study

1. This study is confined to 30 zonal level male cricket players from rural and urban area Chidambaram, Tamil Nadu.
2. The subjects were selected only from the age group of 20 and 24 years.
3. Only selected specific fitness components and physiological parameters were chosen for this study
4. The duration of the experimental period was for 12 weeks.
5. The study is confined only to the selected concurrent training.

LIMITATIONS

The following limitations are considered for the study.

1. The factors like personal habits, life style, routine, diet, climatic conditions and environmental factors which might have had an effect on the results of this study could not be taken into consideration.
2. Hereditary, social and other psychological factors could not be controlled.

HYPOTHESES

1. It was hypothesized that there may be significant differences due to concurrent training on the selected specific fitness components variables namely Cardio respiratory endurance.
2. It was hypothesized that there may be significant differences due to concurrent training on the selected physiological parameters variables namely forced vital capacity.

SIGNIFICANCE OF THE STUDY

1. The study will be helpful to know the analysis of the changes on game specific fitness components and physiological parameters in response to concurrent training among rural and urban cricket players.
2. The study will be helpful to prepare training schedule to improve the analysis of the changes on game specific fitness components and physiological parameters in response to concurrent training among rural and urban cricket players.

- The study will be helpful to realize cricket players and coaches for their coaching purpose.

METHODOLOGY

SELECTION OF SUBJECTS

The purpose of the study was to find out the analysis of the changes on game specific fitness components and physiological parameters in response to concurrent training among rural and urban cricket players. For this purpose, 30 students were selected as subjects from Chidambaram, Tamil Nadu, by applying random sampling method. The age of the subjects ranged from 20 to 24 years.

SELECTION OF VARIABLES

INDEPENDENT VARIABLE

Concurrent training (Combination of Resistance & Aerobic Training)

DEPENDENT VARIABLES

- PHYSICAL FITNESS VARIABLES**
 - Cardio respiratory endurance
 - forced vital capacity

TABLE -1
SELECTION OF TESTS AND UNIT OF MEASUREMENTS

Variables	Name of the test	Unit of measurements
Cardio respiratory endurance	cooper's 12 minutes run/walk	Distance
Forced vital capacity	spirometer	L/S

EXPERIMENTAL DESIGN

The selected subjects (N=30) were divided into two groups each consisting of 15. The experimental group underwent the concurrent training for three days in a week for one hour from 4.00 pm to 5.00 pm for 12 weeks in total and the control group was not involved in any concurrent training but were of the investigator in engaged in their usual activities.

STATISTICAL TECHNIQUES

The following statistical procedures were employed to estimate the analysis of the changes on game specific fitness components and physiological parameters in response to concurrent training among rural and urban cricket players. 't' ratio was calculated to find out the significance difference between the mean of pre and post test of the group

Formulae

$$\text{Mean} = \frac{\sum X}{N} \quad 't' = \frac{DM}{\sigma_{DM}}$$

DM – difference between the mean

σ_{DM} – standard error of the difference between means

TABLE-II
TABLE SHOWING MEAN DIFFERENCE STANDARD DEVIATION AND 't'
VALUE OF EXPERIMENTAL AND CONTROL GROUPS IN
CARDIO RESPIRATORY ENDURANCE

Group	Mean	Md	Std.deviation	Std.error of the mean	't'	Table value
Experimental pre-test	2346	0.97	231.9	0.62	9.67*	2.14
Experimental post test	2443		196.09	0.58		
Control pre test	2352	0.06	212.10	0.67	1.65	2.14
Control post test	2358		198.28	0.62		

***significance at 0.05 level of confidence**

To find out the significant difference between pre test and post test on Cardio respiratory endurance 't' ratio was employed and the level of significance was set at 0.05. The experimental group on vital capacity pre test value was 2346 and post test value was 2443 respectively. The mean difference value was 0.97 and Cardio respiratory endurance obtained 't' ratio 9.67 was greater than the table value 2.14. So it was to be significant. The control group on Cardio respiratory endurance pre test value was 2352 and post test value was 2358 respectively. The mean difference value was 0.06 and Cardio respiratory endurance obtained 't' ratio was 1.65 and is lesser than table value of 2.14. So it is found to be insignificant.

FIGURE-1
BAR DIAGRAM SHOWING THE PRE AND POST TEST MEAN VALUE OF
EXPERIMENTAL GROUP AND CONTROL GROUP OF
CARDIO RESPIRATORY ENDURANCE

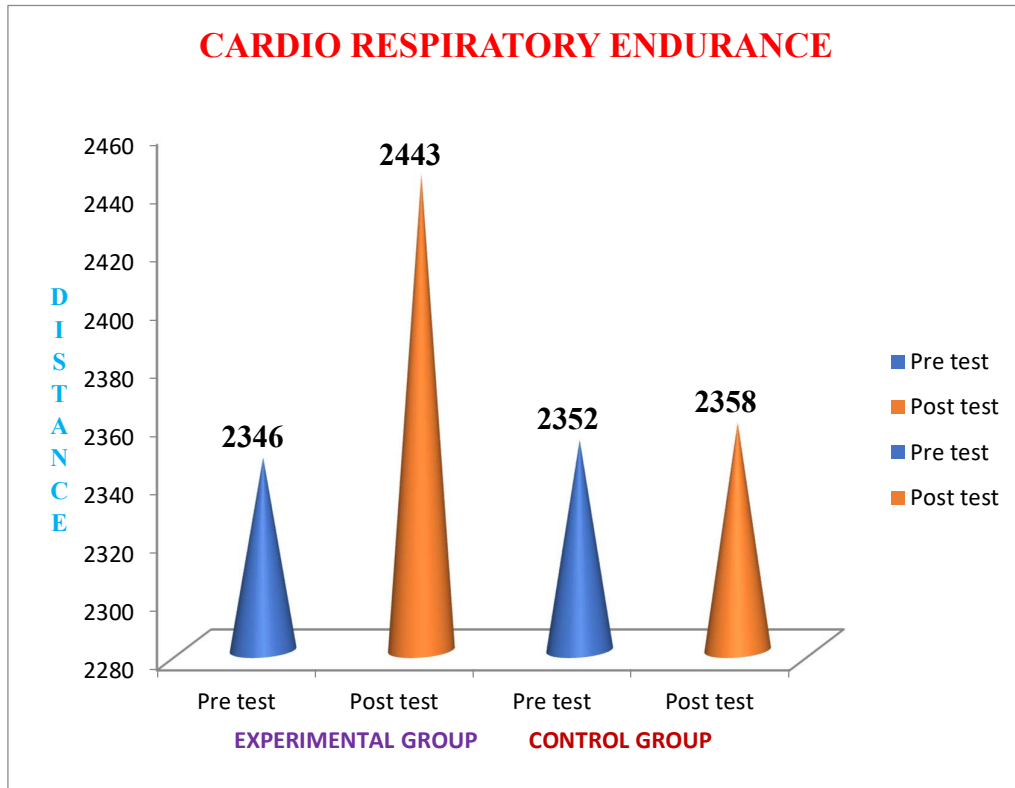


TABLE-III
TABLE SHOWING THE MEAN DIFFERENCE STANDARD DEVIATION AND ‘t’
VALUE OF EXPERIMENTAL AND CONTROL GROUPS IN FORCED VITAL
CAPACITY

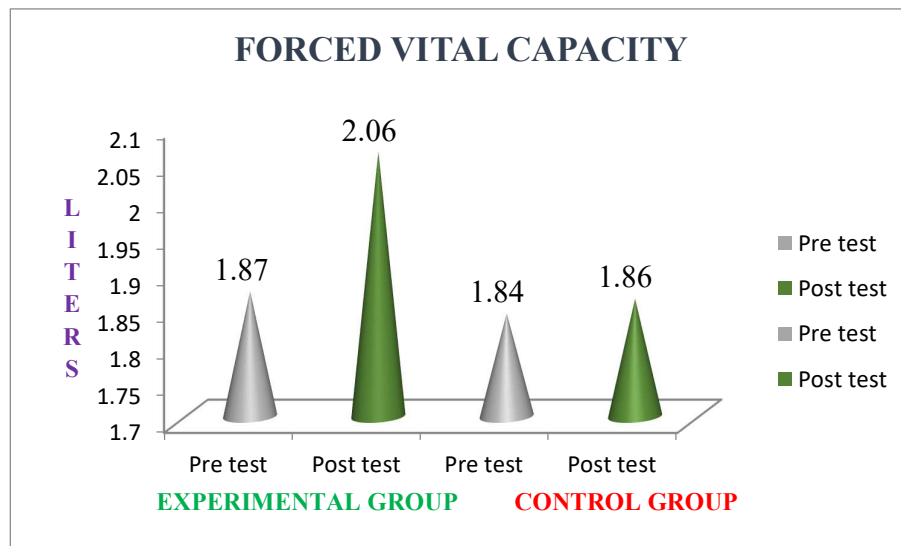
Group	Mean	Md	Std.deviation	Std.error of the mean	‘t’	Table value
Experimental pre-test	1.87	0.19	0.19	0.05	11.76*	2.14
Experimental post test	2.06		0.15	0.03		
Control pre test	1.84	0.02	0.35	0.09	1.82	2.14
Control post test	1.86		0.33	0.08		

*significance at 0.05 level of confidence

To find out the significant difference between pre test and post test on Forced vital capacity ‘t’ ratio was employed and the level of significance was set at 0.05. The experimental

group on Forced vital capacity pre test value was 1.87 and post test value was 2.06 respectively. The mean difference value was 0.19 and Forced vital capacity obtained 't' ratio 11.76 was greater than the table value 2.14. So it was to be significant. The control group on Forced vital capacity pre test value was 1.84 and post test value was 1.86 respectively. The mean difference value was 0.02 and Forced vital capacity obtained 't' ratio was 1.82 and is lesser than table value of 2.14. So it is found to be insignificant.

FIGURE-2
BAR DIAGRAM SHOWING THE PRE AND POST TEST MEAN VALUE OF
EXPERIMENTAL GROUP AND CONTROL GROUP OF
FORCED VITAL CAPACITY



DISCUSSION ON FINDINGS

The result of the study shows that the experimental group that had undergone concurrent training and improved specific fitness components variables namely Cardio respiratory endurance and physiological parameters variable namely forced vital capacity. This may be due to the effect of concurrent

From the result of the present study, it is concluded that the experimental group improved in specific fitness components and physiological parameters variables.

CONCLUSIONS

Based on the statistical analysis and the limitation of the study, and results the following conclusions are drawn.

- It was concluded that experimental group significantly improved on specific fitness components variables namely Cardio respiratory endurance.
- It was concluded that experimental group significantly improved on physiological parameters variable namely forced vital capacity.

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