



## EFFECT OF PLAYING HOCKEY ON SELECTED PHYSIOLOGICAL VARIABLES OF DEGREE COLLEGE BOYS IN GUNTUR DISTRICT

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### ABSTRACT

Modern Hockey demands that all the players should be adapted to all the situations either defending or attacking. The game of hockey now a day is being played in three types of grounds namely gravel, grass and artificial ground. After the introduction of the artificial field the players, coaches and the conditioning experts now understand that the physical variables are playing vital role to reach high level performance in the artificial ground. The aim of this research work was sixty undergraduate studying boys were randomly selected from various colleges in Guntur district at Andhra Pradesh during the academic year 2012 – 2013. The subject age ranges from 15 to 18 years only. Eight weeks of playing hockey significantly improved the  $VO_2$  Max of undergraduate college's boys.

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### INTRODUCTION

Hockey is one of the beautiful and fastest field games, which is very popular in many countries among men and women. The skills of the game are very pleasurable. This game is said to be the oldest of all games played with a ball and a stick Hockey is a game of men and women, played in a rectangular field of 100 yards by 60 yards which is considerably larger than many other play fields. It is usually played by Britain countries with 5 forwards, 3 half backs, 2 full back and formation are being adopted by all hockey playing nations.

"Hockey is a very energetic game; it involves a lot of running and any player needs to be fit if she is going to play fully and enjoy it". Vera Chapman, (1961), Hockey is a game of great skill which calls for keen eyes, powerful wrist, physical fitness and speed of mind. Skillful technique results from careful and constant individual team practice and adds to both players and spectators and enjoyment of the game. This game is beautiful game and the skills are pleasurable. It had been played in many countries like Scotland, Dutch, Persia, Greece and England, played a crude form of Hockey and this sport has become one of the International sport after it was introduced in Olympic game in 1900 at Paris.

Hockey has becomes a very fast and popular game after the introduction of the Astroturf (or) polygrass. This game is played in all the five continents with greatest and enthusiasm. As the ball moves faster in the Astroturf field, many things happen in a fraction of second in the international top class matches.

### CARDIO-RESPIRATORY ENDURANCE

Cardio respiratory endurance is the ability of the body's circulatory and respiratory systems to supply fuel during sustained physical activity (Corbin & Lindsey, 1994).



## VO<sub>2</sub> MAX

The VO<sub>2</sub> max as the maximum amount of oxygen during exercise and it is measured in millilitres of oxygen per kilogram of body mass per minute.

## METHODOLOGY

To achieve the purpose of this research work sixty undergraduate studying boys were randomly selected from various colleges in Guntur district at Andhra Pradesh during the academic year 2012 – 2013. The subject age ranges from 15 to 18 years only. The subjects were divided into two groups as one experimental groups (B) and control group (A). The experimental group was playing hockey and control group was not given any treatment for the training period of eight weeks and were taken as variable for this study. The data collected from the subject on selected physiological variables is statistically analyzed by using 't' ratio, 0.05 level of confidence was fixed to test the level of significance.

## RESULTS AND DISCUSSION

The purpose of the study was to analyze playing hockey on selected physiological variable of higher secondary school boys. The result of this study indicated that there was significant difference in the Cardio respiratory endurance and VO<sub>2</sub> Max among higher secondary school boys.

**TABLE – I: COMPUTATION OF 't' RATIO FOR THE DIFFERENCE BETWEEN PRE AND POST TEST MEANS OF CONTROL GROUP ON VO<sub>2</sub> MAX**

Group	Mean	Standard deviation	Mean difference	Standard error mean	T-ratio
Pre-test	26.7247	2.82077	0.0040	0.00616	0.650
Post-test	26.7327	2.82102			

**\*Insignificant of 0.05 level of confidence**

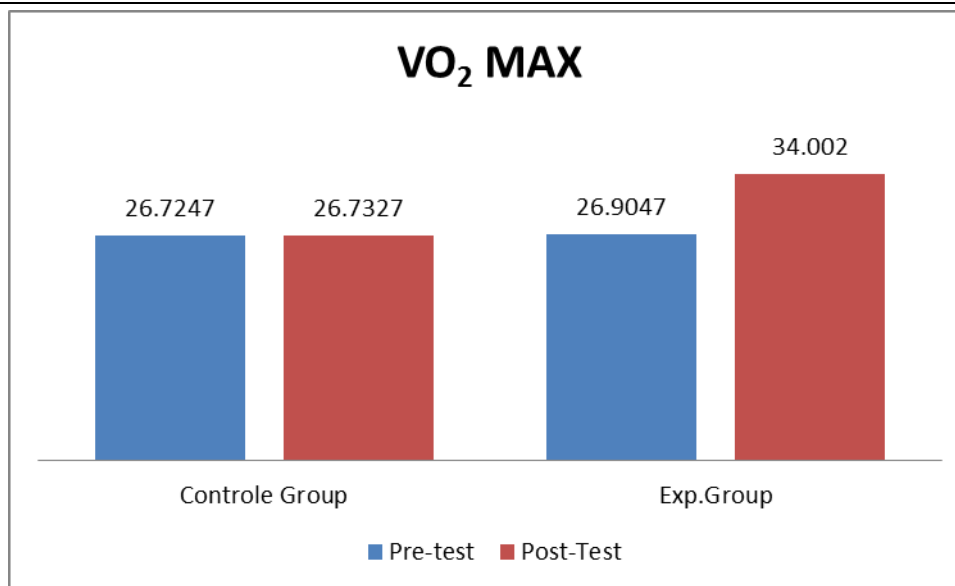
Table I reveals that the computation of 't' ratio between mean of pre and post test on Vo<sub>2</sub> Max of higher secondary school boys. The mean value of pre and post test on control group were 26.72 and 26.73 respectively. Since the obtained 't' ratio .650 was less than the required table value 2.145 it was found to be statistically not significant for the degree of freedom 1 and 14 at 0.05 level of confidence. The results clearly indicated that the Vo<sub>2</sub> Max of the control group had not been improved.

**TABLE – II: COMPUTATION OF 't' RATIO FOR THE DIFFERENCE BETWEEN PRE AND POST TEST MEANS OF EXPERIMENTAL GROUP ON VO<sub>2</sub> MAX**

Group	Mean	Standard deviation	Mean difference	Standard error mean	T-ratio
Pre-test	26.9047	3.80099	7.0973	0.40932	17.339*
Post-test	34.0020	4.39308			

**\*Insignificant of 0.05 level of confidence**

Table I reveals that the computation of 't' ratio between mean of pre and post-test on Vo<sub>2</sub> Max of higher secondary school boys. The mean value of pre and post test on experimental group was 7 and 6.29 respectively. Since the obtained 't' ratio 17.339 was higher than the required table value 2.145 it was found to be statistically not significant for the degree of freedom 1 and 14 at 0.05 level of confidence. The results clearly indicated that the Vo<sub>2</sub> Max of the experimental improved due to the influence of playing hockey.



**FIGURE – I: GRAPHICAL REPRESENTATION OF INDIVIDUAL COMPARISIO  
BETWEEN PRE TEST AND POST TEST ON VO<sub>2</sub> MAX**

**TABLE – III: COMPUTATION OF ‘t’ RATIO FOR THE DIFFEEENCE BETWEEN PRE AND POST TEST MEANS OF  
CONTROL GROUP ON ENDURANCE**

Group	Mean	Standard deviation	Mean difference	Standard error mean	T-ratio
Pre-test	72.5087	3.52079	0.0680	0.14998	0.657
Post-test	73.7020	3.14960			

**\*Insignificant of 0.05 level of confidence**

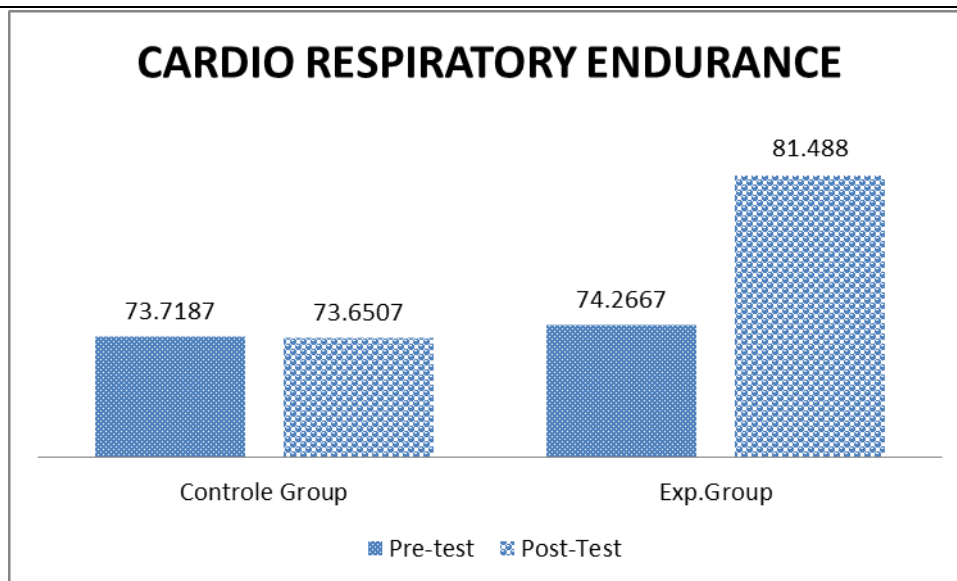
Table III reveals that the computation of ‘t’ ratio between mean of pre and post test on Cardio Respiratory Endurance of higher secondary school boys. The mean value of pre and pot test on control group were 73.72 and 73.65 respectively. Since the obtained ratio .657 was less than the required table value 2.145 it was found to statistically not significant for the degree of freedom 1 and 14 at 0.05 level of confidence. The results clearly indicated that the Cardio Respiratory Endurance of the control group had not been improved.

**TABLE – IV: COMPUTATION OF ‘t’ RATIO FOR THE DIFFEEENCE BETWEEN PRE AND POST TEST MEANS OF  
EXPERIMENTAL GROUP ON ENDURANCE**

Group	Mean	Standard deviation	Mean difference	Standard error mean	T-ratio
Pre-test	74.2667	2.21047	7.2213	0.33411	21.614
Post-test	81.4880	2.29645			

**\*Insignificant of 0.05 level of confidence**

Table IV reveals that the computation of ‘t’ ratio between mean of pre and post-test on Cardio Respiratory Endurance of higher secondary school boys. The mean value of pre and pot test on control group was 74.27 and 81.49 respectively. Since the obtained ratio 21.614 was less than the required table value 2.145 it was found to statistically not significant for the degree of freedom 1 and 14 at 0.05 level of confidence. The results clearly indicated that the Cardio Respiratory Endurance of the experimental improved due to the influence of playing hockey.



**FIGURE – II: GRAPHICAL REPRESENTATION OF INDIVIDUAL COMPARISIO  
BETWEEN PRE TEST AND POST TEST ON CARDIO RESPIRATORY ENDURANCE**

#### CONCLUSION

1. There was significant improvement in cardio respiratory endurance due to the effect of playing hockey of undergraduate students of boys.
2. Eight weeks of playing hockey significantly improved the  $VO_2$  Max of undergraduate college's boys.

#### REFERENCE

1. Ajmer singh et. Al., (2000), Modern Text Book of physical Education, Health and sports Kalyani publishers, Ludhiana, India, P.52
2. Chris Hudson (1971) a guide for selectors, selected field hockey and lacrosse articles, Washington: AAHPER .27.