

# A Comparative Analysis of Selected Motor Abilities & Physiological Variables Among Cricket and Softball Players

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**Abstract**—The purpose of the present study was to compare the selected Motor Abilities & physiological variables of Cricket and Softball players. Total forty (20 from Cricket and 20 from Softball) male players (subjects) from junior national in U.P., were selected for this study. Their age ranged between 16-22 years. Selected Motor Ability Components (Flexibility, Endurance, and Speed & Explosive Strength) & Physiological variables (Resting Pulse Rate, Vital Capacity & Cardiovascular Endurance) of Cricket and Softball players were selected for this study. It was hypothesised that no significant difference would be found between selected Motor Ability & physiological variables of Cricket and Softball players. For analysis of the data Mean & SD were calculated and to examine the significance difference between the group mean of different Motor Abilities & physiological variables, 't' test was applied, and level of confidence was set at .05 levels. Significant difference found between the means of selected Motor Ability Components (Flexibility & Endurance) and physiological (Cardio Vascular Endurance) variables of Cricket and Softball players. No significant difference found between the means of some of Motor Ability Components (speed & explosive strength) and physiological variables (resting heart rate, & vital capacity) of Cricket and softball players. Mean value indicates that in flexibility and explosive strength Cricket players are better than Softball players, Mean value indicates that in endurance and speed Softball players are better than Cricket players. Mean value indicates that in all physiological variables resting heart rate, vital capacity, cardio vascular endurance, Softball players are better than Cricket players.

## I. INTRODUCTION

Cricket is a sport in which both skill and fitness play a very significant part. Though there are different fitness requirements (Motor Ability Components and physiological) for the different playing positions, all

players on a cricket team need to be able to play in all positions at some time, so overall fitness would be relevant.

Softball is a sport requiring high levels of Motor Abilities. It is one of those rare games which demands not only speed but speed, strength, power and endurance. Softball players need a combination of technical, tactical and Motor Ability Components skills in order to succeed. Improving aerobic capacity and overall fitness boosts performance on the Softball field.

Motor Ability Components as well as physiological fitness is important at all levels of the game, rather it is very essential for top level players. Fitness enables a player to cope with the Motor Ability Components demands of the game as well as allowing the efficient use of his various technical and tactical competencies throughout the match.

## II. PURPOSE OF THE STUDY

The purpose of the present study was to compare the selected Motor Abilities & Physiological variables of cricket and Softball players.

## III. METHODOLOGY

Total 40 male subjects were selected for this study. 20 crickets and 20 Softball from junior national level player in U.P were taken as sample and their age ranged between 16-22 years.

Variables: -

Motor Ability Components- Flexibility, Endurance, Speed, Explosive Strength

Physiological Variables- Pulse Rate, Vital Capacity, Cardiovascular Endurance

Flexibility was measured by Back and hamstring stretch test with the help of flex measure. The score was recorded in centimetres. Endurance was measured by distance covered by the subject to Cooper run/walk 12 min. was recorded to the nearest of meter. The distance was recorded with the help of measuring tape. Speed was measured by time taken by subjects to perform 50 yard dash was recorded in seconds with the help of stopwatch. Explosive Strength was measured by the maximum distance covered by the subjects in standing broad jump, was recorded in centimetre. Pulse Rate was measured by radial artery with the help

of stop watch; the score was recorded in beats/min. Vital Capacity was measured by Dry Spiro meter .The score was recorded in litre. Cardiovascular endurance was measured by Modified Harvard Step Test was used to measure the ability to work and to recover from the same.

Statistical Procedure

For analysis of the data, Mean and SD was computed. Comparison was made on the basis of different team games i.e. cricket and Softball. For this purpose, ‘t’ test was applied. For testing the hypothesis the level of confidence was set at .05 level of significance.

IV. DISCUSSION AND FINDINGS

Table-1 Comparison of Means of Selected Motor Abilities of Cricket and Softball players

Components	Group	Mean	S.D.	T
Flexibility	Cricket	17.48	7.10	2.248*
	Softball	15.64	6.41	
Endurance	Cricket	2120.26	362.36	4.276*
	Softball	2620.32	345.16	
Speed	Cricket	13.06	0.58	1.782
	Softball	11.22	0.48	
Explosive Strength	Cricket	52	16.44	0.816
	Softball	48	14.48	

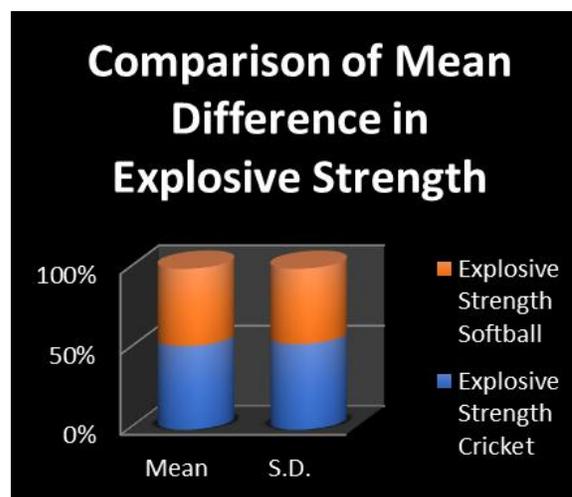
\* Significant at .05 level

“t” value required to be significant at .05 level with 38 degree of freedom is 2.021

Table 1 shows the comparison of means of selected Motor Abilities of cricket and softball players. In flexibility mean value of cricket players is 17.48 and Softball players is 15.64 In Endurance mean value of cricket players is 2120.26 and Softball players was 2620.32. In speed mean value of cricket players was 13.06 and Softball players was 11.22. In explosive strength mean value of cricket players was 52 and Softball players was 48.

There was significant difference found between the means of selected Motor Abilities (Flexibility & Endurance) of Cricket and Softball players, as “t” value required to be significant was 2.021 and calculated value was more compare to tabulated value. There was no significant difference found in between the means of selected Motor Abilities (Speed & Explosive Strength) of Cricket and Softball players, as

“t” value required to be significant was 2.021 and calculated value was less compare to tabulated value.



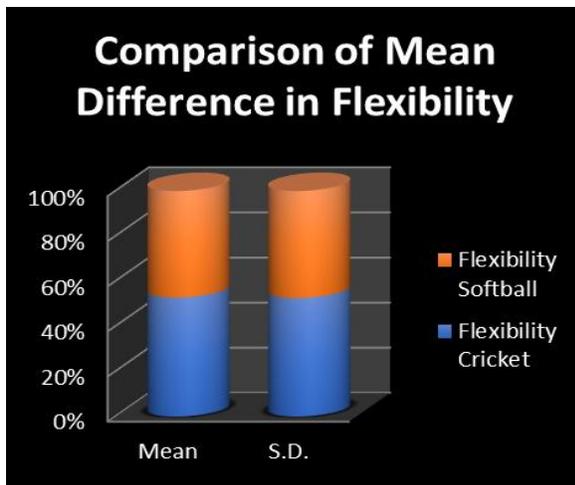
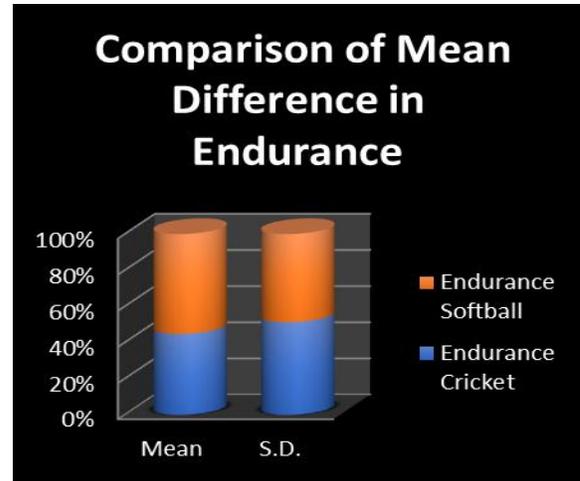
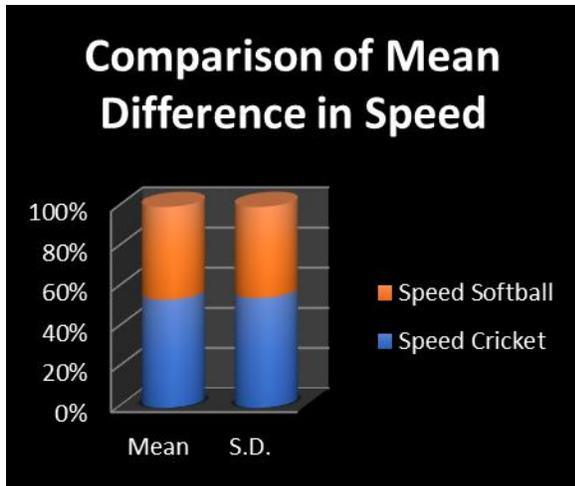


Table-2 Comparison of Means of Selected Physiological Variables of Cricket and Softball players

Components	Group	Mean	S.D.	T
Heart Rate	Cricket	74	6.12	1.08
	Softball	68	5.52	
Vital Capacity	Cricket	3138	398.52	1.82
	Softball	3276	434.66	
Cardio Vascular Endurance	Cricket	65	3.38	3.72*
	Softball	66	3.42	

\* Significant at .05 level

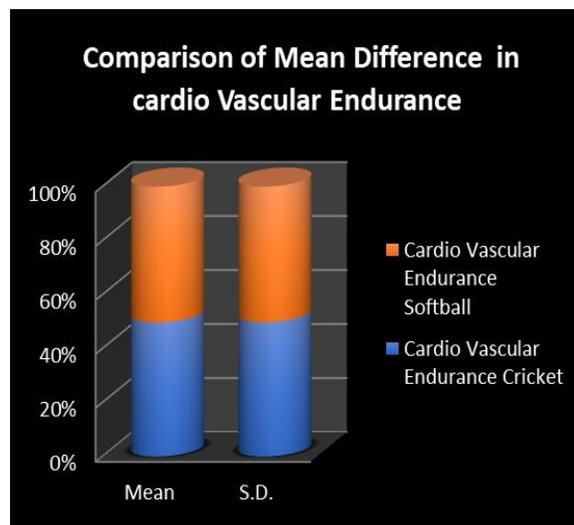
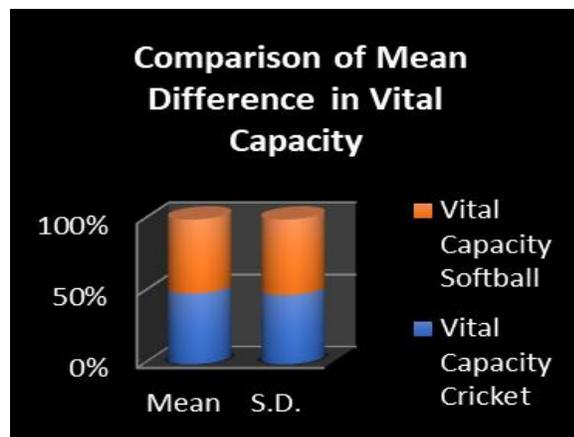
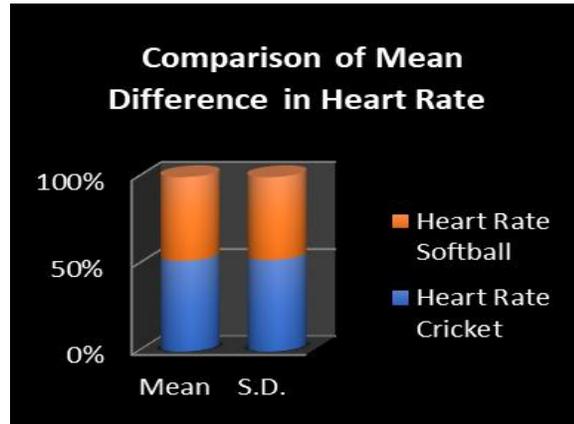
“t” value required to be significant at .05 level with 38 degree of freedom was 2.021

Table 2 shows the comparison of means of selected physiological variables of Cricket and Softball players. In heart rate mean value of Cricket players was 74 and Softball players was 68. In vital capacity mean value of Cricket players was 3138, Softball players was 3276. In cardio vascular endurance mean

value of Cricket players was 65 and Softball players was 66.

There was significant difference found in between the means of only one physiological variable (Cardio Vascular Endurance) of Cricket and Softball players, as “t” value required to be significant was 2.021 and

calculated value was more compare to tabulated value. There was no significant difference found in between the means of other selected physiological variables (Heart Rate & Vital Capacity) of Cricket and Softball players, as “t” value required to be significant was 2.021 and calculated value was less compare to tabulated value.



## V. CONCLUSION

Significant difference found in between the means of selected Motor Abilities (Flexibility & Endurance) and physiological (Cardio Vascular Endurance) variables of Cricket and Softball players. Mean value indicates that in flexibility and explosive strength Cricket players are better than Softball players, Mean value indicates that in endurance and speed Softball players are better than Cricket players. Mean value indicates that in all physiological variables heart rate, vital capacity, cardio vascular endurance, peak flow rate Softball players are better than Cricket players. No significant difference found between the means of some of Motor Ability Components (speed & explosive strength) and physiological variables (heart rate, vital capacity & peak flow rate) of Cricket and Softball players.

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