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BASIC PHYSIOLOGICAL CHARACTERISTICS ELITE LEVEL CRICKET AND FOOTBALL PLAYERS: AN EMPIRICAL STUDY

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Abstract: The purpose of the study was to find out the differences of physiological Characteristics with respect to Resting Heart Rate and Respiratory rate of elite level Cricket and Football players In all , 300 Cricket and 300 Football players from Maharashtra participated in the study and their age ranged between 18-28 years who were regular participation in cricket and football tournaments . Heart rate was recorded by the palpation at redial artery per minute. The score was express in number of heart rate per minute. Respiratory rate the subject was instructed to remain lying on their bed in supine lying position. The tester then record rate of respiration in units per minute by carefully watching the movements of the subjects abdominal. Total number of respiratory movement per minute finally recorded. Findings reveals that there was sig.(significant) difference was found in RHR (t=p<.05) cricket and Footballers. Footballers was less Resting heart rate as compare to Cricketers . The another findings reveals that there was sig.(significant) difference was found in Respiratory Rate (t=p<.05) cricket and Footballers. Footballers was less Respiratory Rate as compare to Cricketers .

Keywords: Resting Heart Rate, Respiratory rate, Cricket , Football

I. INTRODUCTION

Sports performance depends on motor fitness as well as many physical and psychological factors. On teaching the good physique and physical fitness of the athlete, and the many types of motor skills involved in the sport, as well as the strategies, techniques and tactics of the sport.

Today Cricket glittering game has been played since about the 16th century. But there is a lot of difference between then and today. Cricket started after 1844 and the first test match was played between England and Australia from 15 to 19 March 1877 in Melbourne. England is considered the father of cricket and for many years this game started being played in the countries of the British Commonwealth of Nations.

Cricket got its shine in the 21st century but the game was started by the children living in the English town of Wild Weald. During the Middle Ages the Wild was divided into small farms and metalworking communities. Then it is possible that children created this game to pass time in the fields. The ball at that time was made of wood which was stopped by a stick. Later they started making balls from sheep. This happened in the 17th century. Football, a game in which two teams of 11 players each try to score the ball into the opposing team's goal using any part of their bodies except their hands and arms. Only the goalkeeper is allowed to handle the ball and may do so only in the penalty area surrounding the goal. The team that scores more goals wins.

Football is the most popular ball game in the world, with the largest number of participants and spectators. Its main rules and required equipment are simple, the game can be played almost everywhere, from official football playing fields (pitches) to gymnasiums, streets, school playgrounds, parks or beaches.

II. METHODS

Sample Size

Two groups were targeted. The 300 Cricket and 300 Football players from Maharashtra participated in the study and their age ranged between 18-28 years who were regular participation in cricket and football tournaments .

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Inclusion and exclusion criteria

The inclusion and exclusion criteria for participants were as follows:

The inclusion criteria are:

1. The participant agreed to participate in the study via an informed consent.
2. The participants must be Cricket and Football players .
3. The participants were not rotating through other health facility at the time of study.

The exclusion criteria are:

1. Active Physical illness. The participants advised not to participate if under any injuries and management within 2 weeks of study.
2. Inability to obtain the consent of the respondent.
3. Presence of chronic medical conditions such as asthma, heart disease or any other condition. And
4. Participants free from the smoking, drug abuse and alcohol consumptions during the experimental period

2. Research design

The research design refers to “the researcher’s overall plan for testing the research hypotheses”. This study involves a cross sectional, comparative study of two groups of players in a descriptive research.

Source of Data:

The study depends mainly on primary source of data..

(i)

Selection of variables:

The measurements was taken on subject are weight, height, Resting Heart rate and Respiratory rate,

Administration of Physiological test

Resting heart rate

Before recording Resting heart rate the subject was instructed to remain lying on their bed to record the heart rate, Heart rate was recorded by the palpation at redial artery per minute. The score was express in number of heart rate per minute.

Respiratory rate

The Respiratory rate of each subject was recorded before & after training. Before recording Respiratory rate the subject was instructed to remain lying on their bed in supine lying position. The tester then record rate of respiration in units per minute by carefully watching the movements of the subjects abdominal. Total number of respiratory movement per minute finally recorded.

Breath holding capacity after inspiration (BHC)

Before recording BHC after inspiration the respondent were instructed to stand erect with leg bended, after getting signal the respondent inhale air through his nostrils. The nose was locked or closed with nose clip. The total time of inspiration of the respondent was measured in the seconds.

Breath holding capacity (after expiration)

Before recording BHC after expiration the respondent were instructed to stand erect with leg bended, after getting signal the respondent exhale air through his nostrils. Then the nose was locked or closed with nose clip. The total time of r inspiration of the students was measured in the seconds.

Blood Pressure :

The blood pressure were measure through BP Monitor of Amron

Data processing:

Data processing play very significant role in the interpretation of numerical data obtained from individuals by giving numerical expressions to the relationships and the variations with respect to different aspects. The collected data was analyzed as a whole and fragments.

The data was checked for accuracy and completeness and was coded and put up into the SPSS Descriptive statistics for all studied variables, T-test, was considered statistically technique throughout the study. The level of significant was set-up at 0.05 level.

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III. RESULTS AND DISCUSSION

The results concerning this are presented in the form of tables and also illustrated with the help of suitable figures where ever necessary. For the sake of convenience and methodological presentation of the results, following order has been adopted.

Table – 1
Means & SDs of selected components of Cricket players

Sr.No.	Components	Cricket	
		Mean	Standard Deviation
1)	Age (Year)	22.23	2.11
2)	Weight (Kg)	33.03	7.23
3)	Height (Cm)	167.23	12.12

Figure 1 shows the Mean and SDs of the different components such as age, height and weight of Cricket

Table – 2
Means & SDs of selected components of Footballers

Sr.No.	Components	**Football**	
		Mean	Standard Deviation
4)	Age (Year)	22.70	2.47
5)	Weight (Kg)	36.02	7.99
6)	Height (Cm)	166.11	13.12

Table -2 shows the Mean and SDs of the different components such as age, height and weight of footballers

TABLE -3
MEANS SDS AND T-RATIO OF RHR OF CRICKET AND FOOTBALLERS.

Physiological Variable	Players	Number	Mean	S.D.	*t-ratio*
RHR	Cricket	300	65.34	7.30	*3.36**
	Football	300	61.23	5.44	

* Sig.(significant)at .05 level,

As per Table – mean scores, standard deviation and t-ratio of selected physiological variable with respect to RHR of cricket and Footballers.

The Mean scores and standard deviation of RHR of cricket and Footballers s have been presented through graphically in fiure-3 .

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FIGURE -3
ILLUSTRATES THE MEAN SCORES AND STANDARD DEVIATIONS OF HEART RATE OF FOOTBALL AND CRICKETERS.

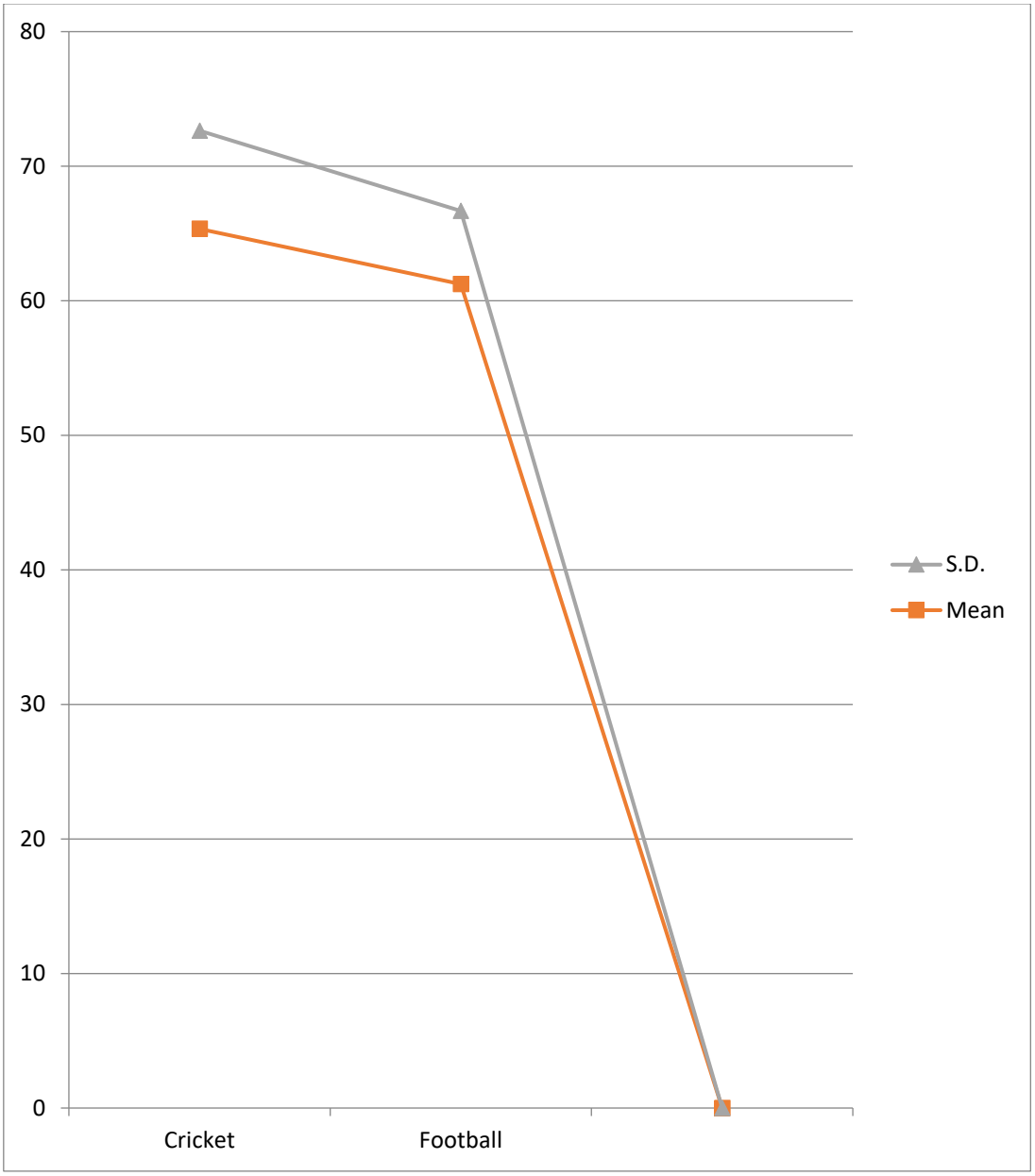

TABLE-4
MEAN SCORE STANDARD DEVIATION AND T-RATIO OF RR OF FOOTBALL AND CRICKETERS.

Physiological Variable	Test	Number	Mean	S.D.	t-ratio
Respiratory Rate	Cricket	300	17.76	2.23	2.79*
	Football	300	15.89	1.77	

*Sig.(significant)at 0.05 level.

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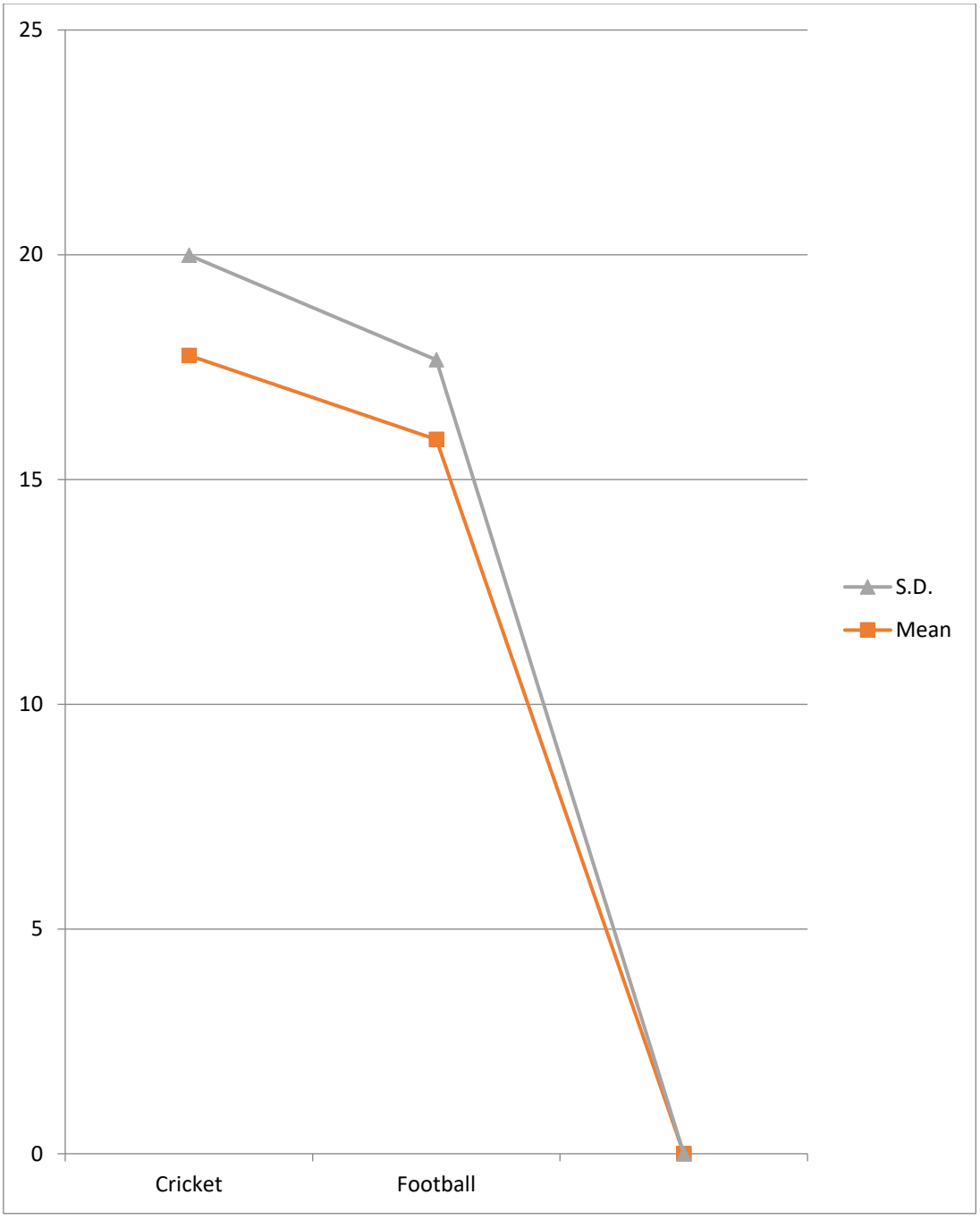
As per Table – 4 mean scores, standard deviation and t-ratio of selected physiological variable with respect to Respiratory Rate of cricket and Footballers.

The Mean scores and standard deviation of selected physiological variable with respect to Respiratory Rate of cricket and Footballers have been presented through graphically in fiure-4.

FIGURE-4
ILLUSTRATES THE MEAN SCORES AND STANDARD DEVIATIONS OF RESPIRATORY RATE OF CRICKET AND FOOTBALLERS.



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IV. DISCUSSION

The sports performance depend on several, physical physiological, and psychological factors along with motor fitness. The good physique and physical fitness of the athlete, and several types of motor skills involved in the game as well as on teaching the strategies, techniques and tactics of the game. The aim of the study was to compared the physiological Characteristics with respect to Resting Heart Rate and Respiratory rate of elite level Cricket and Football players .

In respect to, RHR of cricket and Footballers they have obtain the mean value of 65.34 and 61.23 respectively which are given in the Table – 3 reveals that there was sig.(significant) difference was found in RHR (t=p<.05) cricket and Footballers. Footballers was less heart rate as compare to Cricketers.

Whereas , Respiratory Rate of cricket and Footballers they have obtain the mean value of 17.76 and 15.89 respectively which are given in the Table – 4 reveals that there was sig.(significant) difference was found in Respiratory Rate (t=p<.05) cricket and Footballers. Footballers was less Respiratory Rate as compare to Cricketers .

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