

A COMPARISON OF SELECTED CARDIOVASCULAR  
VARIABLES BETWEEN FOOTBALLER AND  
MIDDLE DISTANCE RUNNER



BY  
SUJIT KUMAR BAR



A THESIS  
SUBMITTED TO  
THE DEPARTMENT OF PHYSICAL EDUCATION  
MUGBERIA GANGADHAR MAHAVIDYALAYA  
IN LIEU OF A  
PAPER FOR THE DEGREE OF MASTER OF  
PHYSICAL EDUCATION

JULY, 2016

A COMPARISON OF SELECTED CARDIOVASCULAR  
VARIABLES BETWEEN FOOTBALLER AND  
MIDDLE DISTANCE RUNNER



BY

SUJIT KUMAR BAR



A THESIS

SUBMITTED TO

THE DEPARTMENT OF PHYSICAL EDUCATION

MUGBERIA GANGADHAR MAHAVIDYALAYA

IN LIEU OF A

PAPER FOR THE DEGREE OF MASTER OF

PHYSICAL EDUCATION

JULY, 2016

EXAMINED

  
26.7.16



DEPARTMENT OF PHYSICAL EDUCATION

MugberiaGangadharMahavidyalaya

VIDYASAGAR UNIVERSITY

Mugberia-721425, West Bengal



**Dr.DilipkumarBandyapadhaya**

Associate. Professor

Ref. No.....

Date: .....

*CERTIFICATE*

This is to certify that Mr.Sujit Kumar Bar is a regular student of MugberiaGangadharMahavidyalaya under Vidyasagar University, in the season of 2014 -2016. For the Master of physical education, semester-IV, carried out his research study my supervision and guidance in partial fulfilment of the requirements for the master of physical education degree with his thesis entitled "A COMPARISON OF SELECTED CARDIOVASCULAR VARIABLES BETWEEN FOOTBALLER AND MIDDLE DISTANCE RUNNER" the material and data composed from students in this study are genuine and were collected by him.

Place.....

Date.....

*Dilip Kumar Bandyapadhaya*  
(Dr.Dilip Kumar Bandyapadhaya) 08.02.16

Associate professor

## VITA

Name of the scholar : Sujit Kumar Bar

Father Name :Sudhansu Bar

Place of birth :UttarPithulia,PurbaMedinipur

Address : Vill- Uttar Pithulia; P.o– Dhandalibar; P.o – Marishda.  
Dist – PurbaMedinipur; State – West Bengal.

Date of birth :17.04.1992

Email [sujitkumarbar1213@gmail.com](mailto:sujitkumarbar1213@gmail.com)

Nationality Indian

Religion Hinduism

Under graduate and graduate schools and colleges attended:

M.P : Banamalichatta high school

H.S :Banamalichatta high school

B.A(Hons) :BajkulMilaniMahavidyalaya(Vidyasagar university)

B.P.Ed :Mugberiagangadharmahavidyalaya,purbamedinipur

Degree obtained :Bachelor of arts(Hons)-2012,Vidyasagar university,Bachelor  
of physical education,2012-2013,Vidyasagar university.

## TABLE OF CONTENTS

<b>CHAPTER-1</b>	<b>PAGE</b>
<b>INTRODUCTION:</b>	
1.1 General Introduction-----	1-3
1.2 Statement of the problem-----	4
1.3 Purpose of the study-----	4
1.4 Delimitation-----	4
1.5 Limitation-----	4-5
1.6 Hypothesis-----	5
1.7 Significance of the study-----	5
1.8 Definition and explanation of terms-----	6
<b>CHAPTER-2</b>	
<b>REVIEW OF RELATED LITERATURE:-----</b>	<b>7-12</b>
<b>CHAPTER-3</b>	
<b>METHODOLOGY:-----</b>	<b>13-21</b>
3.1 Selection of the subjects-----	13
3.2 Criterion measure -----	13
3.3 Reliability of the data and instrument-----	13
3.4 Design of the study-----	14
3.5 Techniques of measurement-----	14
3.6 Procedure for collecting data-----	14-21
3.7 Level of significance-----	21

**CHAPTER-4**

**RESULTS AND DISCUSSION:**

4.1 Introduction-----	22
4.2 Personal data measurement-----	22
4.2.1 Personal data analysis-----	22-23
4.3 Cardiovascular Variables-----	23-31

**CHAPTER 5**

<b>SUMARY, CONCLUTIONS AND</b>	<b>32-34</b>
--------------------------------	--------------

**RECOMMENDATIONS:**

5.1 Summary-----	32
5.2 Conclusion-----	33-34
<b>REFERENCE-----</b>	<b>35-41</b>
<b>APPENDICES-----</b>	<b>I- II</b>



### LIST OF TABLES

Table no.	Titles	Page
1	Mean, S.D of age (year), Height (cm), Body weight (kg) for football players and Middle distance runner	22
2	Mean, SD, t ratio of of Resting Heart Rate(RHR) between two groups(football players and middle distance runners)	23
3	Mean, SD, t ratio of blood pressure (systolic) between two groups(football players and middle distance runner)	24
4	Mean, SD, t ratio of of Blood Pressure(diastolic) between two groups(foot ballers and middle distance runners)	26
5	Mean, SD, t ratio of Peak Heart Rate(PHR) between two groups(footballers and middle distance runner)	27
6	Mean, SD, t ratio of $vo_{2max}$ between two groups(footballers and middle distance runner)	28
7	Recovery Heart Rate (RcHR) of Footballers and Middle distance runners	29
8	Coefficient of correlation of Predicted $vo_{2max}$ with BP(Sys),BP(Dias) and Resting Heart Rate(RHR) off football players	30
9	Coefficient of correlation of $vo_{2max}$ with BP(Sys),BP(Dias and Resting Heart Rate(RHR) off middle distance runners	31

### LIST OF FIGURES

Table No.	Particulars	Page No.
1	Administration of weight	15
2	Administration of height	16
3	Graphical presentation of Mean and S.D. of RHR for football players and middle distance runner	24
4	Graphical presentation of Mean and S.D. of BP(Sys) for football players and middle distance runner.	25
5	Graphical presentation of Mean and S.D. of BP(Dias) for football players and middle distance runner.	26
6	Graphical presentation of Mean and S.D. of PHR for football players and middle distance	28
7	Graphical presentation of Mean and S.D. of $VO_2$ max for football players and middle distance runner	29
8	Graphical presentation of Mean(Recovery Heart rate for football players and middle distance runner.	30