Motor Ability and Physiological Performance in Sportsmen and Non-Sportsmen of Hyderabad, Karnataka

Dr. N. G. Kannur[1] Dr. Sateesh Kumar M. Dongre[2] Dr. Sangeeta S. Bamman[3]

ABSTRACT

Physical education offers opportunity in competitive situation for physical, social, emotional and moral development. Sport forms an inseparable part of the system of physical education. The purpose of the study was to compare and analyze the variations on selected motor ability components and physiological variables and athletic performance of physical education students of Hyderabad, Karnataka region of India.

The present study was conducted on 120 male subjects, selected out of the students of physical education colleges (Sportsmen and non-sportsmen) of Gulbarga University, Gulbarga. The age of the subjects ranged from 21 to 25 years. Tests for motor performance and physiological variables were conducted at the class rooms, college grounds, and Indoor stadium, where adequate facilities were avliable, to conduct these tests. It was concluded that though the sportsmen of physical education colleges, affiliated to Gulbarga university, showed superior performances in many of the motor ability and psychological components, they still needed regular practice, hard work, professional determination and devotion, to improve in strength, flexibility and power, resting pulse rate and body fat percentage, to attain perfect level of sportsmanship.

INTRODUCTION

Physical education offers opportunity in competitive situation for physical, social, emotional and moral development. Sport forms an inseparable part of the system of physical education. Sports and games are the best ways to earn social recognition and acquire a status in the modern society. The term motor ability is used synonymously with general athletic ability. There are many factors that contribute to successful performance in athletic skill. In most of the advanced and developed countries, the awareness for motor learning and skill development among children is very much

1. Dr. N. G. Kannur ADPE/ Lecture, Dept of Physical Education, GUG-06
2. Asst. Director of Physical Education, Govt. First Grade College, Chitguppa
3. Guest Lecturer, Department of Education, Gulbarga University, Gulbarga

scientific and prolonged; which perhaps helps them to maintain level of general fitness. The motor abilities like power, speed, agility, balance, reaction time etc. are essential qualities required to be developed in the players.

For specific physiological systems of the body to be fit, they must function well enough to support the particular game that the player is playing since different games make different demands upon the organism with respect to neurological, respiratory, and circulatory and temperature regulating functions. Physiological systems are highly adaptable to exercise. The response of each system is discrete. Hard work is necessary to improve the fitness of the temperature regulation mechanism. Each task has its major physiological components and fitness for the task requires effective functioning of appropriate systems.

Proper training induces specific and identifiable physiological effects on variables like, vital capacity, pulse rate, breath holding, blood pressure, and cardio respiratory endurance etc. A physically fit person tends to have lower pulse rate and blood pressure level, after a given amount of work, than does an untrained person. Regular exercise improves the body's ability to utilize oxygen which helps to fuel body functions.

Statement of the problem

The purpose of the study was to compare and analyze the variations on selected motor ability components and physiological variables and athletic performance of physical education students of Hyderabad, Karnataka region.

Significance of the study

The study would be of great significance as it would provide an opportunity to the physical educators, coaches and athletes; as they would be able to scientifically understand and assess the changes in motor ability components, physiological variables and athletic performance.

This study could bring out information about the status of vital physiological variables among selected team game players of inter-collegiate level. This knowledge could reflect the functional status of the players with which, the comprehensive and effective training loads could be formulated.

Objectives of the study

1. To study the performance of motor ability skills of sportsmen and non-sportsmen physical education colleges of Hyderabad, Karnataka area.
2. To study the physiological status sportsmen and non-sportsmen physical education colleges of Hyderabad, Karnataka area.

Hypothesis

There would be a significant difference on selected motor ability components and physiological variables, on athletic performance of physical education college students in Hyderabad, Karnataka region.

Definition and explanations of the terms used

1. *Motor ability*

It is a term used to define the total dynamic physiological state of an individual. The components of motor abilities are strength, speed, agility, flexibility and endurance. These components are performance oriented and are dependent upon functioning of different systems of the body in an integral manner.

Motor ability components

1.	Speed	:	50 Yard dash
2.	Strength	:	Pull up test
3.	Flexibility	:	Sit and reach test
4.	Endurance	:	400 yard walk test
5.	Agility	:	Standing broad jump

2. *Physiological variables*

Resting pulse rate	:	Number of pulses per minute
Vital capacity	:	One tenth of litre on water Spiro meter
Blood pressure	:	(mm of Hg) pressure on arteries during systolic and diastolic phase
Fat measurement	:	Thickness of four sites (biceps, triceps, sub scapular and super iliac)

METHODOLOGY

The present study was conducted on 120 male subjects from students of Bachelor of Physical Education and Master of Physical Education (sportsmen and non-sportsmen) of the Gulbarga University, Gulbarga. The age of the subjects ranged from 21 to 25 years.

Data Collection

The following method was used for collection of data. The tests for motor performance and physiological variables were conducted at the classrooms, college grounds, stadium, Indoor stadium wherever adequate facilities were available for conducting the tests.

The researcher took assistance of the staff and Ph.D. scholars of physical education, MBBS students, Medical officers, and staff of Gulbarga University health center and physical education department. Demonstration of all the tests was given to the subjects and all effort were made by the researcher to ensure accuracy and uniformity in conducting the tests.

RESULTS & DISCUSSION

Motor and physiological tests are analysed and the results are discussed here.

Table-1 : Mean and standard deviation of the selected motor performance of sportsmen and non-sportsmen students

Variables	Sportsmen		Non-Sportsmen		't'
	Mean	SD	Mean	SD	
Strength	8.43	2.01	8.33	1.95	0.66
Speed	7.17	0.55	7.03	0.45	2.54*
Flexibility	10.37	0.75	10.38	0.49	0.175
Agility	2.27	0.23	2.12	0.19	1.56
Endurance	139.37	18.10	139.17	17.39	0.14

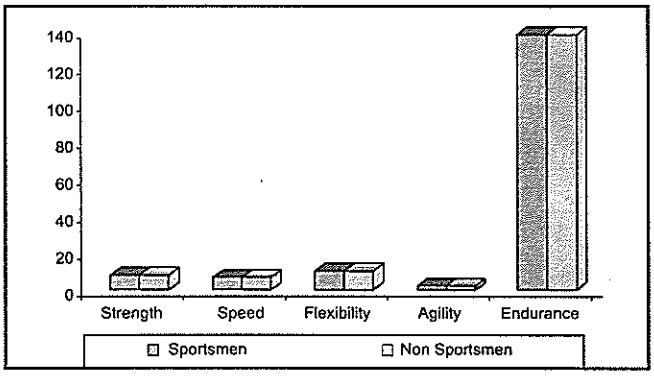

Fig.- 1 : The mean of the selected motor performance of sportsmen and non-sportsmen students of physical education colleges affiliated to Gulbarga University

In motor ability test, it was observed from the study that, there was no significant difference in selected tests such as, strength, flexibility and agility; and significant differences were found in speed and endurance tests.

Table-2 : Mean and SD of physiological variables of sportsmen and non-sportsmen students

Variables	Sportsmen		Non Sportsmen		't'
	Mean	SD	Mean	SD	
Resting pulse rate	68.23	3.00	68.47	3.46	1.84
Systolic blood pressure	116.87	3.47	117.13	2.59	2.00*
Dialostic blood pressure	76.23	2.57	76.60	3.32	3.08**
Vital capacity	4.09	0.61	3.99	0.51	3.33**
Body Fat percentage	16.74	2.26	16.86	2.28	0.042

*Significant at 0.05 level ** Significant at 0.01 levels

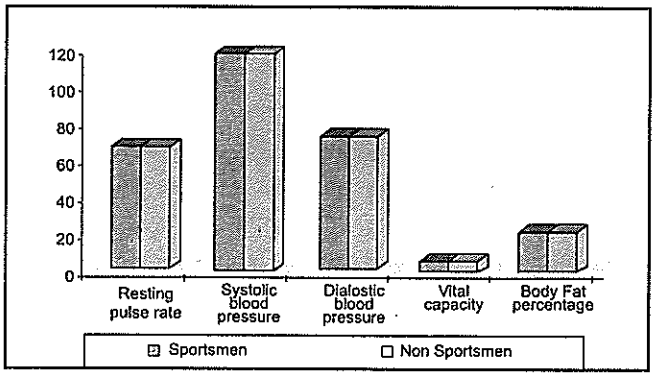

Fig.-2 : Mean of physiological Variables of sportsmen and non-sportsmen students

In physiological test, it was observed that there was no significant difference in resting pulse rate and body fat percentage of sports and non-sportsmen of physical education colleges affiliated to Gulbarga University.

In blood pressure (both systolic and dialostic) and vital capacity there was significant difference between sportsmen and non-sportsmen. In resting pulse rate and body fat percentage sportsmen were found to be better than non-sportsmen.

CONCLUSION

Hence, it was concluded that though the sportsmen of physical education colleges affiliated to Gulbarga university (Hyderabad Karnataka) showed superior performances in many of the motor ability and physiological components they still need regular practice, hard work and professional determination and devotion to improve in strength flexibility and power resting pulse rate and body fat percentage, in order to attain the perfect level.

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