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## Research Article

# A comparative study of motor fitness of school state level hockey and football players of Himachal Pradesh

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### ABSTRACT

The purpose of the study was to compare the selected motor fitness variables of school state level hockey and football players of Himachal Pradesh. The researcher undertook null hypothesis to compare the selected motor fitness variables. Selective sampling device was used to select the subjects. One hundred and twenty-eight male subjects (64 hockey players and 64 football players) for the present study who played semifinal in school state of Himachal Pradesh. Selected motor fitness variables were measured by AAHPERD youth fitness test having variables pull-ups, bent knee sit-ups, standing broad jump, shuttle run, 50 yard dash, and 600 yard run/walk. For the purpose of analysis, “*t*”-test was applied. Level of significant difference was judged at 0.01 level of confidence. Results showed that hockey players were better in strength component bent knee sit-ups and football players were better in strength component standing broad jump. Hockey and football players had almost same level of agility, speed, endurance, and strength component pull-ups.

**Keywords:** Agility, Endurance, Motor fitness, Speed, etc.

### INTRODUCTION

Motor fitness is frequently chosen to achieve desirable goals. Motor fitness may be defined as the successful adaptation to stresses of one's life style. The requirement of fitness is highly specific for different sports. It is quite possible to feel fit when a few scientific states would prove that one was far from it in physiological terms. A player may go to play a match knowing that by all standard of measurable fitness, he is the fittest among the others and yet be quite unfit. It is also possible that one is very fit in one of the sports such as football, basketball, and volley ball, but when one swims a 100 m quickly, he/she gets outbreath and feel quite tired. An athlete faces different types of physical stresses based on the nature of the activity concerned. For instance, a wrestler, weight filter, a boxer, and a footballer need more strength, Endurance than a long jumper or a thrower does, but obviously strength is the requirement of all the sports and games. Motor fitness refers to the efficiency of basic movement in addition to the physical

fitness. For football and hockey players, strength, flexibility, agility, and speed are the important variables according to the sports sciences. Keeping in view the concept, this study was taken to compare the levels of motor fitness between football and hockey players.

Waseem and Riyaz (2013) made a study to compare the motor fitness components between football and volleyball players of school participants of Nagpur City. The results indicated that football players showed better performance in all motor fitness components such as flexibility, agility, strength, and speed as compared to volley ball players. Ramzan (2013) made a study to compare motor fitness components between intercollegiate volley ball and basketball players of R.T.M.N. University, Nagpur. The results showed that basketball players were better in flexibility, endurance, and power as compared to volleyball players. While as volleyball players were better in agility as compared to basketball players. Gaur and Singh (2013) made a study to compare selected physical fitness components among badminton and table tennis intercollegiate players. Research results showed that table tennis players had more flexibility and endurance in comparison to badminton players. Badminton and table tennis players both had same level of agility.

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**Table 1: Significance of mean difference in scores of motor fitness variables of school state level hockey and football players of Himachal Pradesh**

Test Items	Hockey players		Football players		Mean difference	df	“t”
	Mean	SD	Mean	SD			
Pull-ups	10.4000	2.49875	8.2000	2.67044	2.2	128	1.00
Bent knee sit-ups	31.9077	4.96778	27.2923	6.98374	4.6154	128	4.850*
SBJ	219.7385	11.52752	233.9077	9.88800	14.1692	128	7.522*
Shuttle run	9.5083	0.62991	9.7326	1.42034	0.2243	128	1.164
50 yard dash	10.7225	1.12839	10.4942	1.28267	0.2283	128	1.077
600 yard run/walk	173.3278	23.03012	178.3386	33.16544	5.0108	128	1.001

## PURPOSE

The purpose of the study was to compare the motor fitness variables of school state level hockey and football players.

## METHODOLOGY

Researcher undertook null hypothesis to compare the selected motor fitness variables. Selective sampling device was used to select the subjects. One hundred and twenty-eight male subjects (64 hockey players and 64 football players) were selected for the present study. Selected motor fitness variables were measured by AAHPERD youth fitness test. Variables for the present study were pull-ups, bent knee sit-ups, standing broad jump, shuttle run, 50 yard dash, and 600 yard run/walk. For the purpose of analysis, “t”-test was used to find out the significant difference between the collected data.

## ANALYSIS AND INTERPRETATION OF DATA

It is evident from the Table 1 that “t”-value for the variables bent knee sit-ups and standing broad jump came out to be significant at 0.01 level of confidence and “t”-value for the variables pull-ups, shuttle run, 50 yard dash, and 600 yard run/walk came out to be insignificant at 0.01 level of confidence.

## DISCUSSION OF FINDINGS

1. It is evident from the Table 1 that hockey players were better in bent knee sit-ups than football players. It may be because hockey players have to play in bending position and they have strong abdominal muscles and back muscles
2. Football players were better in standing broad jump than hockey players. It may be because football players have more leg strength as they have to kick the football with legs
3. Both groups of hockey and football players were more or less similar on pull-ups, shuttle run, 50 yard dash, and 600

yard run/walk as climate conditions and living conditions are almost same in Himachal Pradesh.

The results of the study are partially supported by Waseem and Riyaz (2013) research results showed that football players showed better performance in all motor fitness components such as flexibility, agility, strength and speed as compared to volleyball players. Gaur and Singh (2013) research results showed that table tennis players had more flexibility and endurance in comparison to badminton players. Badminton and table tennis players both had same level of agility. Ramzan (2013) research results showed that basketball players were better in flexibility, endurance, and power as compared to volleyball players. While as volleyball players were better in agility as compared to basketball players.

## CONCLUSION

Based on the results of the present study, it was concluded that hockey players were better to perform bent knee sit-ups and football players were better to perform standing broad jump. Both groups of hockey players and football players were almost similar on the variables pull-ups, shuttle run, 50 yard dash, and 600 yard run/walk.

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Research Article

# A comparative study on selected physiological variables of sports person and non-sport person

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### ABSTRACT

The study was taken by researcher to measure the selected physiological variables of sports persons and non-sports persons. For the research, total 20 subjects were selected for the collection of data where 10 female sports person and 10 non-sports person as selected as the subjects and tests were administered. Sports person and no sports persons then mean, standard deviation, and t-test have done for the statistical analysis. The present study suggests that it has been found that there is a significant mean difference between sports person and non-sports persons on lungs capacity, body mass index (BMI), and blood pressure (BP) level. Sports persons were found to possess more lung capacity, less BMI, and more BP.

**Keywords:** Body mass index and blood pressure of sports persons and non-sports persons, Lungs capacity

### INTRODUCTION

Despite the diversity of sizes and habits, all living things perform the same basic functions. They respond to changes in their immediate environment. Living things also show adaptability and their internal operations and responses to stimulation can vary from moment to moment. If that takes them from one place to another, we call the process locomotion.

Physiology is the study of how body function? Physiology ranges from the various basic units of organism, the cell, to more complex organs and organ systems such as the brain and respiratory organs. In physiology, we study how different parts or organs of an organism work together to achieve a popular function. In our body, for example, the digestion of food involves the action of hormones and other chemicals produced by the stomach, liver, and pancreas.

The physiological parameters seem to play a very important role in the modern competitive sports in production of more excellent performance, because competitions are organized more frequently than ever the sum sets at a place at a

particular time, it may rise at other place, moreover, because of physiological parameters and difference in time the sports person the same time at another place. It is well known that the individual performance in any sports activities follows diurnal physiological parameters. Pattern method may be derived to condition the sports person to produce peak performance with change in diurnal physiological parameters.

Unfortunately, little research literature is available on these aspects of sports. Therefore, physiological parameters such as cardiovascular endurance, vital capacity, heart rate, and hemoglobin receive a special consideration and it is an important requisite for outstanding performance in any sports activity.

### ABOUT WOMEN PHYSIOLOGY

Women exhibit several anatomic and physiologic characteristics that distinguish their responses to exercise from those of men. Women are smaller than men, have less muscle mass, and more fat mass for a given body size. Blood volume, stroke volume, and cardiac output are all lower in women than in men. These and other factors contribute to lower maximal aerobic power (even for similar training status) in women. The reproductive hormones, estrogen, and progesterone can influence ventilation,

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substrate metabolism, and thermoregulation during exercise. Women have a greater tendency for EIAH, which can limit  $VO_2$  max as well as submaximal exercise performance at higher intensities. Women tend to use a greater percentage of fats during exercise, but also rely on CHOs. Thermoregulatory control is altered significantly over the course of the menstrual cycle by fluctuations in circulating levels of progesterone and estrogen. It is important for women to include regular exercise in their daily routines, particularly because regular physical activity has been implicated in the prevention of osteoporosis, breast cancer, heart disease, and depression.

Physiological responses and adaptations of women to exercise are influenced by her genetically determined morphological and functional characteristics, and by her level of physical fitness. Physiological responses of women during submaximal and maximal exercise differ quantitatively from those of men but adaptations to training are qualitatively similar in both. Studies demonstrate that differences between the sexes in performance of athletic events that require high aerobic or anaerobic capacity are due, to a large extent, to differences in body structure and composition: the average woman is smaller and lighter and has less muscle mass than the average man. These characteristics influence physiologic responses of the musculoskeletal, cardiovascular, and respiratory systems.

## PURPOSE OF THE STUDY

The purpose of the study is to compare lungs capacity, body mass index (BMI), and blood pressure (BP) of sports persons and non-sports persons of Mangalore University.

## SIGNIFICANCE OF STUDY

It is hoped that the data generated and interpreted in the study will help the health related institutions; the information collected can be used for monitoring the students who are not regularly involved in physical fitness activities. The author also assumes that this study will help the students who are more concentrated in academics than physical activities because to improve their health condition.

## Methodology

The sample for the present study was 20 female students, 10 students were sportspersons and 10 students from non-sports persons of Mangalore University.

## Variables

BMI, BP Lungs capacity.

Statistical procedure for analysis “t”-test was applied to compare the mean scores of the two groups. Correlation study involving the investigation of the possible relationship of BMI,

BP and lungs capacity variables between female sports persons and non-sports persons of Mangalore University coefficient of correlation “r” was computed to find out the relationship of independent variable to dependent variable.

## RESULTS AND DISUSSION

Test components	Subjects	Mean	S.D.	t
Lung capacity	Sports persons	1.85	0.38	0.04
	Non-sports persons	1.62	0.27	
Body Mass Index	Sports persons	21.33	2.60	0.92
	Non-sports persons	21.47	4.05	
Blood pressure	Sports persons	109.6	7.50	0.83
	Non-sports persons	108.6	9.52	

Significance 0.05 levels

The investigator as divided into:

1. The female sports person and non-sports person age group was 21–28
2. The investigators tried to explore, lung capacity, BMI, and BP
3. To know physiological variables of female non-sports person and sports person.

The investigator analyzed the physiological variables conducting the test on lung capacity where the investigator found that the average mean value of female sports person 1.85 and non-sports person 1.62, by this show that the lung capacity of sports person was better than compared to non-sports person. Modified BMI was the investigator found that the average mean value of female sports person 21.33 and non-sports person 21.47, by this show that body mass of female sports person was better than compared to non-sports person. BP was the investigator found that the average mean value of female sports person 109.6 and non-sports person 108.6, by this, it shows that BP of female sports person was better than compared to non-sports person.

Outside appearance may be the most obvious difference between a sports person and non-sports person. Sports person types tend to have more muscles and less body fat than more sedentary people. The physical capabilities of sports person may exceed those who do not regularly engage in exercise, and active sports people also tend to have health problems. The BMI obesity level of sports person and non-sports person is having more obese then sports person. Sports person” BP tends to be higher than BP of non-sports person. A low resting heart rate is generally a sign of good cardiovascular fitness and efficiency. A well-trained sports person may have a normal resting heart rate of only 40 beats/min, compared with the average heart rate that ranges from 60 to 100 beats a min.

The results of this study based on comparison of physiological variables sports person and non-sports person student no match with the findings of studies of in extraversion. This different is possible reason variations environment, type of sport, and tool module. It is very important to evaluate the personality of a person. Therefore, it is necessary that teachers and coaches knowledge in various surfaces than physiological variables characteristics sports person and understand importance and impart in term different practice and match.

### CONCLUSION

The study demonstrated health report is an effective way to increase the awareness about physiological level of female health status. The present investigation will raise concern to explore the female lung capacity, BMI, and BP of sports

persons and non-sports person. The result of present study suggests that it has been found that there is significant mean difference between sports person and non-sports persons on lungs capacity, BMI, and BP level. Sports persons were found to possess more lung capacity, less BMI, and more BP.

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