



## Comparison of Aerobic and Anaerobic Capacity Between College Level Handball and Basketball Players

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### ABSTRACT

The study was to find out the comparison of aerobic and anaerobic capacity between college level handball and basketball player. To achieve the purpose of this study sixty. Players were randomly selected from departments and affiliated colleges of Bharathiar University, Coimbatore, Tamilnadu and their ages were ranged between 18 and 25 years. The subjects were divided in to two equal groups with thirty subject college level handball and basketball players and thirty subject's college level handball and basketball players. The data were collected were statically analyzed by independent 't' test which was used to find out the significant improvement on selected variables, the shows that there was a significant improvement in the aerobic and anaerobic capacity.

**Keywords:** handball, basketball, aerobic and anaerobic

### INTRODUCTION

Handball (also known as team handball, European handball or Olympic handball) is a team sport in which two teams of seven players each (six out court players and a goalkeeper) pass a ball using their hands with the aim of throwing it into the goal of the other team. A standard match consists of two periods of 30 minutes, and the team that scores more goals wins.

Basketball is a game played by two Five player teams, the object of which is to get the ball through the opposing player's hoop the most times to score the most points, or a large ball that is used in the game. A team can score a [field goal](#) by shooting the ball through the basket being defended by the opposition team during regular play. A field goal scores three points for the shooting team if the player shoots from behind the [three-point line](#), and two points if shot from in front of the line. A team can also score via [free throws](#), which are worth one point, after the other team is assessed with certain fouls. The team with the most points at the end of the game wins, but additional time (overtime) is issued when the score is tied at the end of regulation. The ball can be advanced on the court by throwing it to a teammate, or by bouncing it while walking or running (dribbling). It is a violation to [lift, or drag, one's pivot foot without dribbling the ball](#), to [carry](#) it, or to [hold the ball with both hands then resume dribbling](#).

The word aerobic meaning with oxygen to represent idea. Even so the dynamics of the idea or more complicated than implied by the definition. Aerobic can be viewed as an intricate system of bodily supply and demand. That is the body need energy for any kind of activity and the need is filled by burning off the foods that eat. Oxygen is the spark the fuel needs to burn regardless aerobics is the word in general use. The fact is that cooper codified and organized what fitness means to many people. He is generally credited with being one of the main forces of the current fitness craze. The majority medical opinion is that aerobic programers strengthen heart muscle, increase the efficiency of lungs and offer other wonderful benefits.

Anaerobic exercise is used by sports person in non-endurance sports to build power and by body builders to build muscle mass. Muscles that are trained under anaerobic conditions develop biologically differently giving them greater performance in short duration, high intensity activities. Aerobic exercise, on the other hand, includes lower intensity activities performed for longer periods of time. Activities like walking, running, swimming, and cycling require a great deal of oxygen to generate the energy needed for pro-longed exercise.

### CRITERION MEASURES

The following tests were used to measure the selected variables.

1. Queens college step test was used to measure the aerobic capacity (cardio respiratory Endurance) and score was recorded in minutes
2. Maragariya-kalamen test was used to measure the anaerobic Capacity (speed) and score was recorded in seconds.

## METHODS

To achieve the purpose of the study, 30 handball and 30 basketball players were selected as subjects from departments and affiliated colleges of Bharathiar University, Coimbatore, Tamilnadu. The subjects age ranged between 18 and 25 years. The selected women handball players will be assessed by aerobic and anaerobic capacity. The selected 30 handball and 30 basketball players subjects were divided into two equal groups, Group – I named as handball players and Group-II named as basketball players.

## STATISTICAL ANALYSIS

The descriptive calculation and 't' test will be computed. The level of significance will set at 0.05 level of confident.

**TABLE 4.1**

### COMPUTATION OF 't' RATIO BETWEEN HANDBALL AND BASKETBALL PLAYERS ON AEROBIC CAPACITY

Variable	Group	N	Mean	Standard deviation	Standard Error Mean	t-ratio
Aerobic	Handball	30	49.43	1.68	.30	<b>11.00*</b>
	Basketball	30	44.03	2.09	.38	

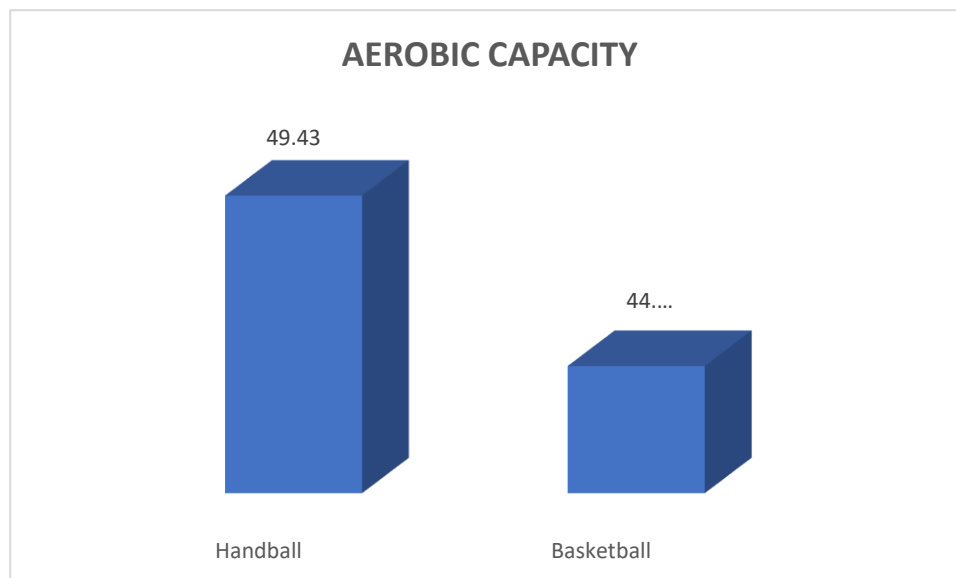
\*Significant at 0.05 level of confidence (2.14) 1 and 14

Table 4.1 shows the mean value of aerobic for handball and basketball players were 49.43 and 44.03 respectively. The obtained "t" ratio value of 11.000 was higher than the required table value of 2.09 for degrees of freedom, 1 and 19 significant at 0.05 level of confidence. The study also reveals that the handball players had more aerobic capacity than basketball players.

The mean value of handball and basketball players on aerobic were graphically represented in figure I.

**FIGURE I**

### Graphical Representation on Mean Values of handball and basketball players on aerobic capacity



**TABLE 4.2**

### COMPUTATION OF 't' RATIO BETWEEN HANDBALL AND BASKETBALL PLAYERS ON ANAEROBIC CAPACITY

Variable	Group	N	Mean	Standard deviation	Standard Error Mean	t-ratio
Anaerobic	Handball	30	450.30	54.23	9.90	<b>6.96*</b>
	Basketball	30	368.42	34.71	6.33	

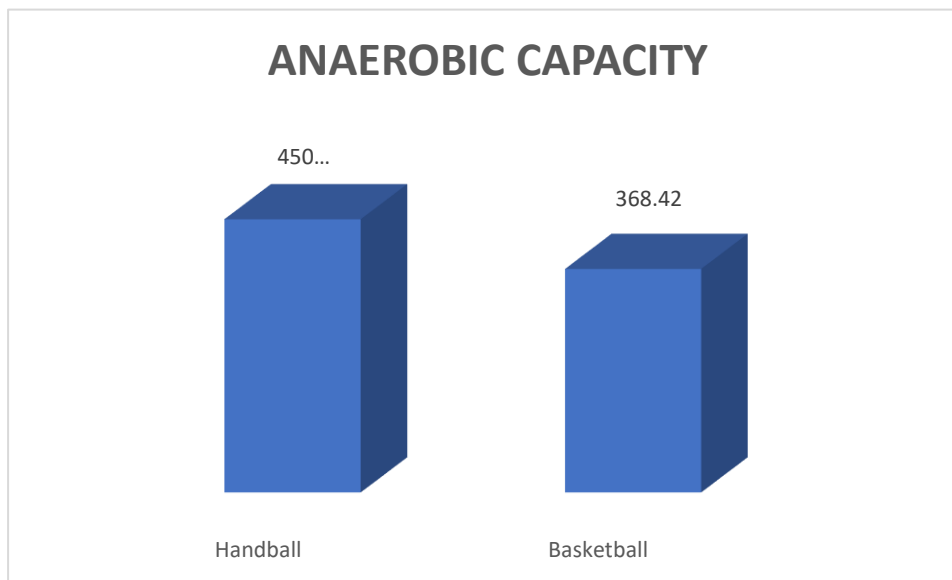
\*Significant at 0.05 level of confidence (2.14) 1 and 14

Table 4.2 shows the mean value of anaerobic for handball and basketball players were 450.30 and 368.42 respectively. The obtained "t" ratio value of 6.96 was higher than the required table value of 2.09 for degrees of freedom, 1 and 19 significant at 0.05 level of confidence. The study also reveals that the handball players had more anaerobic capacity than basketball players.

The mean value of handball and basketball players on anaerobic capacity were graphically represented in figure II.

**FIGURE II**

**Graphical Representation on Mean Values of handball and basketball players on anaerobic capacity**



## DISCUSSION AND FINDINGS

- The results obtained from present studies revealed that there was significant difference on aerobic capacity between handball and basketball players.
- The study also reveals that the handball players had more aerobic capacity than basketball players.
- The results obtained from present studies revealed that there was significant difference on anaerobic capacity between handball and basketball players.
- The study also reveals that the handball players had more anaerobic capacity than basketball players.

## CONCLUSIONS

Based on the results and discussion made into the previous chapter, the Following conclusions have been made:

1. It was concluded that there was a significant difference among handball and basketball players on aerobic capacity.
2. It was concluded that there was a significant difference handball and basketball players on anaerobic capacity.
3. It was concluded that handball players had better aerobic capacity than basketball players.
4. It was concluded that handball players had better anaerobic capacity than basketball players.

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