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## Study on selected motor abilities between sprinter and basketball players

**Arup Mahato and Dr. Nita Bondopadhaya**

### Abstract

Athletics is an exclusive collection of sporting events that involve competitive running, jumping, throwing, and walking. The most common types of athletics competitions are track and field, road running, cross country running, and walk running. The simplicity of the competitions, and the lack of a need for expensive equipment, makes athletics one of the most commonly competed sports in the world. In 1934 the first college games were staged in New York City's Madison Square garden, and college basketball began to attract heightened interest. By the 1950s basketball had become a major college sport, thus paving the way for a growth of interest in professional basketball. Track and Field and basketball both are most attractive and popular game at present. In this article an attempt has been made to find out the differences on selected motor abilities between the sprinters and the basketball players. Total 30 subjects were selected for the study. Among the subjects, 15 were in sprinting group and 15 were from basketball group. The subjects were in state level in both the disciplines. The sprinters were from Siliguri SAI Training center. The basketball players from Visvs-Varati, Santiniketan. The age of the subjects ranges from 16-19 years. The measured criterion for the study were the personal data and the data were also collected for the motor ability like sprinting speed from 50 yard dash, standing broad jump for leg explosive strength, and reaction time. The data were tabulated and 't' test was conducted. The finding on selected motor abilities of sprinters and basketball players, in sprinting performance the sprinters were significantly better than the basketball players and sprinters had better leg explosive strength than the basketball players.

**Keywords:** Selected motor abilities Sprinter and Basketball players

### 1. Introduction

Physical fitness comprises two related concepts: general fitness (a state of health and well-being) and specific fitness (a task-oriented definition based on the ability to perform specific aspects of sports or occupations). Physical fitness is generally achieved through correct nutrition, exercise and enough rest. Fitness was commonly defined as the capacity to carry out the day's activities without undue fatigue. A comprehensive fitness program tailored to an individual will probably focus on one or more specific skill and on age or health-related needs such as bone health. Motor fitness refers to the capability to an athlete to perform effectively at their particular sport. The components of motor fitness are agility, balance, co-ordination, power which entails speed and strength and finally reaction time. These are the key factors in any sports. The abilities or components of skill related sport, such as running, catching, tacking or kicking, but are the underlying skills which are brought to bear when participating in a sport.

Athletics is an exclusive collection of sporting events that involve competitive running, jumping, throwing, and walking. The most common types of athletics competitions are track and field, road running, cross country running, and race walking. The simplicity of the competitions, and the lack of a need for expensive equipments, makes athletics one of the most commonly competed sports in the world.

Basketball was invented in December 1891 by the Canadian clergyman, educator, and physician James Naismith. Naismith introduced the game. At the request of his superior, Dr Luther H. Gulick, he organized a vigorous recreation suitable for indoor winter play. The game involved elements of American football, soccer, and hockey and the first ball used was a soccer ball.

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The above mentioned two sports are well established in their arena and are the most popular form of sports too. Both the form needs a huge quantity of physical fitness, stamina and power. For the purpose the players need to train themselves rigorously throughout the high quality skilled players with excellent motor skill and physical fitness.

In this article an attempt has been made to find out the difference in motor ability between sprinter and basketball players.

**1.1 Purpose**

The purpose of the study is to find out differences exists in some selected motor abilities between the Basketball players and the Sprinters from Athletics.

**2. Methodology**

**2.1 Subjects:** Total 30 subjects were selected for the study. Among the subjects, 15 were in Basketball group and 15 were from sprinting group. The subjects of the study were the performer in junior state level performer in both the disciplines. The Athletes were from Siliguri SAI Training Center. The Basketball players were from Visvavarati, Santiniketan. The age of the subjects ranges from 16-19 yrs.

**2.2 Criterion Measure:** The measured criterion for the study was the personal data like the Height (cm) and Weight (kg). Data were also collected for the motor ability like sprinting speed from 50yrd dash, standing broad jump for leg explosive strength, and reaction time.

**2.3 Instruments used**

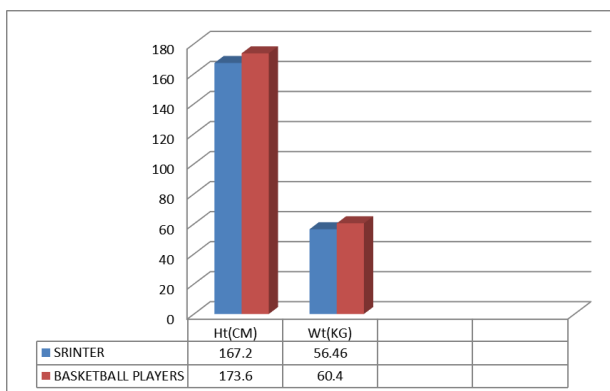
- i) Weighing machine.
- ii) Stadiometer.
- iii) Reaction timer.
- iv) Measuring tape.
- v) Lime, rope etc.

**2.4 Analytical procedure:** The data were tabulated and ‘t’ test was conducted. Collected data were statistically analyzed and the level of significance was set at 0.01 level. All the data were analyzed using appropriate statistical software.

**3. Result and Discussion**

**Table I:** Mean and Standard Deviation of Height and weight of sprinter and basketball players

Group	Height (cm)		Weight (kg)	
	Mean	SD	Mean	SD
Sprinter	167.2	±4.74	56.46	±5.24
Basketball players	173.6	±7.44	60.40	±6.38



**Fig 1:** Graphical representation of Mean of parson data for Sprinter and Basketball Groups

From the table 1, it was observed the personal data, i.e. height (cm) and weight (kg) of the subjects of sprinters and basketball groups. The mean and SD of the subjects were  $167.2 \pm 4.74$ ,  $173.6 \pm 7.44$  and  $56.46 \pm 5.24$ ,  $60.40 \pm 6.38$  respectively. The results indicated that mean scores of height and weight of the basketball group was higher that the sprinter group.

**Table II:** Mean and SD of 50 yard run of Sprinter and Basketball players and their comparison

Mean and SD		SED	‘t’
Sprinter	Basketball players		
$5.77 \pm 0.24$	$6.76 \pm 0.84$	0.23	4.35**

Figure 2. Graphical representation of Mean and SD of 50 yard run for Sprinter and Basketball Groups

Table 2 indicated the mean and SD of 50 yard run of sprinter and basketball players which were  $5.77 \pm 0.24$ ,  $6.76 \pm 0.84$  and ‘t’ value was 4.35. It was observed from the above table in 50 yard run sprinter group performed better than the basketball group, the ‘t’ value was statistically significant at 0.01 level. Lesser the time better was the performed. Sprinter group significantly performed better in 50 yard run than the basketball group which is obvious.

**Table III:** Mean and SD of Standing Broad Jump of sprinter and Basketball players and their comparison

Mean and SD		SED	‘t’
Sprinter	Basketball players		
$2.78 \pm 0.20$	$2.15 \pm 0.13$	0.06	10.32**

Figure 3. Graphical representation of Mean and SD of Standing Broad Jump for sprinter and Basketball Groups

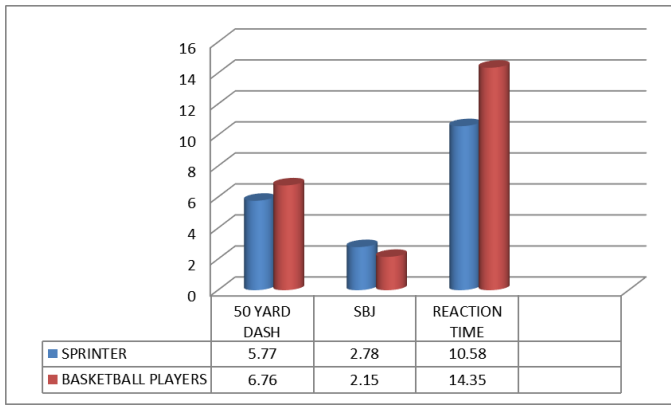
Table 3 indicated the mean and SD of Standing Broad Jump of sprinter and basketball players which were  $2.78 \pm 0.20$ ,  $2.15 \pm 0.13$  and ‘t’ value was 10.32. It was observed from the above table that the ‘t’ value was statistical significant at 0.01level that means sprinter group performed better that the basketball group in leg explosive strength. Sprinter group and basketball group were in training schedule and both groups were in regular extensive training programs. But sprinter group was better in speed and explosive strength as compared to basketball group.

**Table IV:** Mean and SD of Reaction Time of Sprinter and Basketball Player and their comparison

Mean and SD		SED	‘t’
Sprinter	Basketball players		
$10.58 \pm 4.76$	$14.35 \pm 4.48$	1.69	2.24**

Table 4 indicated the mean and SD of Reaction Time of sprinter and basketball players which were  $10.58 \pm 4.76$ ,  $14.35 \pm 4.48$  and ‘t’ value was 2.24. It was found from the above table that the Reaction Time of sprinter was better than the basketball group and the ‘t’ value was statistical significant at 0.01 level.

From the present study it was observed that the sprinter group performed better in speed, leg explosive strength and reaction time than the basketball group.



**Fig 2:** Graphical representation Mean of performance variables for Sprinter and Basketball Groups

**4. Conclusion**

The finding on selected motor abilities of sprinters and Basketball players.

- In sprinting performance the sprinters were significantly better than the Basketball players.
- Sprinters had better leg explosive strength than the basketball players
- There was no significant difference of reaction time between the sprinters and Basketball players. Sprinter group has better reaction time than the basketball group.

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