Arjun Singh
Ph.D. Scholar Lovely
Professional University,
Phagwara, Punjab, India

A study on selected physical fitness parameters among female handball and basketball players

Arjun Singh

Abstract
This study aimed at comparing the Speed and agility among Handball and Basketball female players. The study was carried out among 40 female Handball and Basketball players i.e. 20 players from each game. Independent t-test was used as a statistical technique in the study. A insignificant difference of Speed and Agility was found among female Handball and Basketball players, as the p-value was found to be insignificant at 0.05 level of significance respectively.

Keywords: Agility, speed, handball players and basketball players

1. Introduction
The Physical education is the indispensible part of the education. The nation's wealth is the health of the people. Physical education includes the acquisition and refinement of motor skills, the attainment of knowledge regarding the physical activities, exercise and for the complete well-being of a person. Physical fitness is the core for being well-being. A proper mode of training is very essential for achieving physical fitness and motor skills. A athlete requires a proper mode of training as a failure in this aspect could result in a poor show of performance and often defeat (Akilan & Shah 2014) [1]. Handball is a sport that is dominated by anaerobic system. This game is one of the fastest game in the world and motor fitness components like speed and agility come to play through out the game. Speed is a conditional ability likewise strength and endurance. It has a complex nature as it considerably depends upon the central nervous system (CNS) activity. The speed should never be equated with the mechanical speed which is equal to the distance covered per unit of time. Speed signifies the ability to execute the motor movements with high speed. "Speed is the performance prerequisite to do motor actions under given conditions (movement task external factors, Individual prerequisites in minimum of time (Singh, 1993) [5]. Agility is simply the ability of quick and swift movements. It gives grace to the movements and enhances sports performances. In sports and physical education, agility may be defined as "One's controlled ability to change body position and direction rapidly as well as accurately (Kansal, 1960). During the game various skills, fundamentals movements and motor abilities are displayed by the sportsperson. A high power and strength is required in the lower and upper extremists while executing movements such as blocking, pushing, throwing, jumping and running (Gorostiaga *et al.* 2005) [2]. Basketball is a very popular game in the world. Components like speed, agility and jumping are some of the dominant motor fitness components of basketball although execution of such type of movements requires a high degree of balance, motor fitness and coordination ability. Both these games handball and basketball are merely similar in nature and are played with high intensity levels as well as with swifter changes in the direction of the movements (Ghosh & Majumdar, 2003) [3].

Objectives of the study
1. To find out the agility between female handball and basketball players.
2. To study out the speed between female handball and basketball players.

Correspondence
Arjun Singh
Ph.D. Scholar Lovely
Professional University,
Phagwara, Punjab, India

Delimitation
1. The study was delimited to 40 female players (i.e. 20 players from handball and the remaining 20 from basketball.
2. The study was delimited to the players between 18 to 25 years of age group.
3. The variable to be measure was delimited to agility and speed.

Hypothesis
1. There will be a significant difference in agility between female handball and basketball players.
2. There will be a significant difference in Speed between female handball and basketball players.

Significance
The study adds to the already existing knowledge with regards to different important requirements of the already measures in the game of handball and basketball. The study can be guideline for the coaches and physical educators while formatting the training schedule for the respective games.

Methodology
A systematic method and procedure were adopted while conducting this study has been illustrated below:

Selection of the samples
The total number of the samples for this study was 40 (i.e. 20 female players were selected each from handball and basketball games respectively. The selection of the samples was done by random sampling.

Selection of the tool
1. Agility: Shuttle run test was used to measure agility among the handball and basketball players.
Administration of the test: Two parallel lines are marked on the floor 10 yards apart. The two wooden blocks are placed

behind one of the lines. The subject is asked to start fro behind the other line. On the signal ready go, the timer starts the watch and the subjects runs towards the blocks, picks- up one block, runs back behind the starting line, then the subject places the block behind the starting line, then the subject runs back and picks-up the second block and then carried it back across the starting line. As soon as the second block is placed on the ground, the timer stops the watch and records the time. Scoring: Two trials are given to the subjects with some rest in between. The timing better out of the two trials is recorded to the nearest 10th of a second as the score of the last item.

2. Speed: 50 meter dash was used to measure speed among the handball and basketball players.
Administration: 50 meter dash also known as sprints test is used to measure speed. This test is suitable for both boys and girls aged 8 years and above. The subject has to take any position behind the restraining line. On receiving the command go the subject's starts running as fast as they can till they reach the finish line. A Separate helpers with a stop watch is required to watch their respective subject's notes their timing right from the command go and switches off their stopwatch and records the time accurately as the subjects crossed the finishing line. Only one correct trial is permitted. The subject is asked to restart the sprint in case they starts before the word go or fails to start quickly at the command go. Scoring: The time elapsed from the start go upto the crossing of the finish line is considered for the scoring of the subjects.

Statistical Technique
To compare speed and agility among Handball and Basketball players independent t-test was used.

Results and discussion
All results obtained have been presented in different Tables and Figures and interpreted subsequently.

**Table 1.1:** Comparison of Speed between the Handball and Basketball Players.

	Levene's Test for equality of variances		t-test for equality of means			
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference
Equal variance assumed	.624	.435	.110	38	.913	0.1350

The table1.1 clearly shows that the p-value.913 is greater at 0.05 level of signicance, thus a insignificant difference was found in speed between the female Handball and Basketball players.

**Table 1.2:** Comparison of Agility between the female Handball and Basketball Players.

	Levene's Test for equality of variances		t-test for equality of means			
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference
Equal variance assumed	.0.14	.907	.601	38	.551	.04400

From the table1.2 it is evident that the p-value.551 is greater at 0.05 level of significance thus indicating a insignificant difference in agility between the Handball and Basketball players.
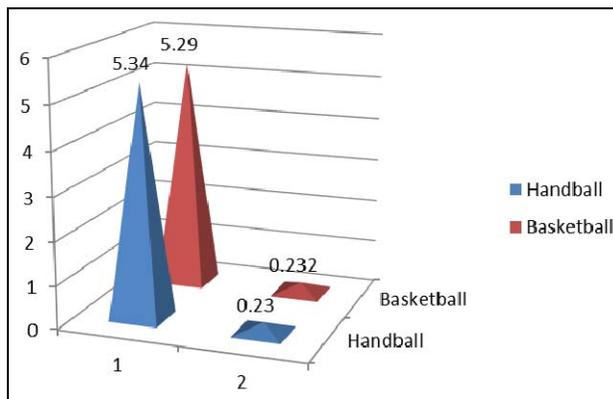
Graph 1.2 Graphical representation of the variable agility between the female Handball and Basketball players.

The graph 1.2 shows the mean value of speed (i.e. 5.34 for handball players and 5.29 for Basketball players
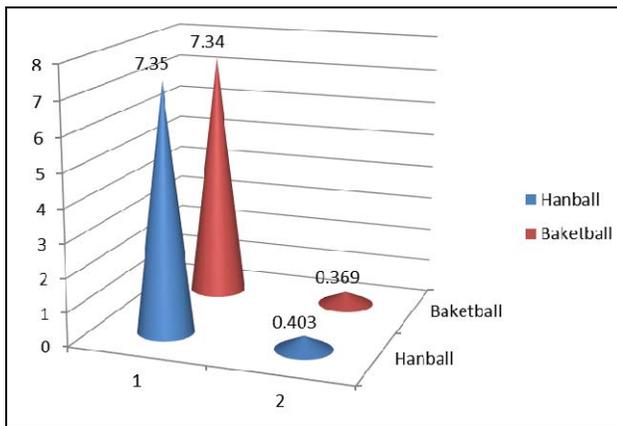
Graph 1.1 Graphical representation of the variable Speed between the female Handball and Basketball Players.

The graph 1.2 shows the mean value of agility (i.e. 7.35 for handball players and 7.34 for Basketball players. A standard deviation of.403 and.369 was found between the Handball and Basketball Players.

Conclusions
Following conclusions were drawn on the basis of result obtained.
1. Agility among the handball and basketball players does not differ significantly.
2. Speed also does not differ significantly among the handball and basketball players.

References
1. Akilan N, Shah SM. Comparison of speed and agility between handball and volleyball players. International Journal of Physical Education, Fitness and Sports. 2014; 3(1):31-34.
2. Gorostiaga EM, Granados C, Ibáñez J, Izquierdo M. Differences in physical fitness and throwing velocity among elite and amateur male handball players. Int J Sports Med. 2005; 26:225-232.
3. Ghosh SS, Majumdar C. A Study on Agility and Dynamic Balance of Kho-Kho Handball and Basketball Players. International Journal Scientific Research. 2003; 2(7):442-444.
4. Kansal KD. Test and measurement in sports. New Delhi: D.V.S Publication, 1996, 310.
5. Singh H. Science of sports coaching. New Delhi: D.V.S Publication. 1993, 115.