



Assessing Motor Abilities In Basketball And Handball Players: A Comparative Study

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ABSTRACT

The purpose of the study is to assess the motor abilities of basketball and handball male players. For this study, 30 male players were selected randomly as subjects (15 players from basketball and 15 players from handball) who participated in the inter-university competition for Manipur University. The subjects' ages ranged from 18 to 21 years. The selected motor abilities of the study were speed and agility. The test for administration of speed ability was 20-meter dash and for administration of agility ability was Illinois agility test. The collected data were analysed in the SPSS platform by using descriptive statistics and an independent sample t-test was employed. The level of significance is set at 0.05. The results found that there was an insignificant difference in speed ability between basketball and handball players as the calculated t-value of 0.098 was less than the tabulated t-value of 2.048. Similarly, there was an insignificant difference found in agility ability between basketball and handball players as the calculated t-value of 0.518 was less than the tabulated t-value of 2.048. Thus, it can be concluded that there is no significant difference between basketball and handball players in their speed and agility abilities. This was determined as both basketball and handball require speed and agility for the effectiveness of performance.

Keywords: Basketball, handball, speed, agility.

1. Introduction

Sport is an exceedingly popular game played by millions of people around the globe. Sport often entails rapid movement, a physical approach, and mental effort. Basketball needs a fantastic mix of physical and mental strength and team effort. In a four-sided court with a hoop on either end, players score points by putting the ball in their opponent's basket. Athletes often rotate and move the ball consistently to get a good chance to shoot the ball; the player must show good eye movements and chain the ball. Basketball is also available as an indoor or outdoor game, which implies that it can help in growth on two types of platforms. The basketball has more to offer to the game than the individuality it requires (Ye Du, Bin Liu, 2021). The sport of Handball is a fast game sport that bears some aspects of soccer, basketball, and Hockey. Handball game mat placed on a court with a goal line on each end of the court. The aim is to score more goals compared to the opposition. Players use their hands to pass, game and revive the small ball into the opponents' goal. The game involves quick decision-making; agility and teamwork make the game exciting. Furthermore, there are many types of research carried out concerning the game and its queeres (Alberto Pardo Ibáñez, et al., 2020). Motor skills are referred to as the ability of a person to perform physical movements and engage in coordinated actions. They include various abilities such as balance, agility, strength and coordination. Furthermore, motor skills are important in different areas of life such as sports performance, physical fitness and day-to-day activities contributing to physical literacy essential for health and well-being in general. In addition, it is worth noting that motor skills have been found to significantly impact on cognitive functioning and academic achievement (Geertsen SS, et al., 2016). Motor skills are essential for basketball players. Included in these motor skills are balance, speed, power, agility and coordination. Such movements as dribbling and shooting require the

mentioned skills as well as defending on the court. Hence, through strength and conditioning exercises targeted at these motor abilities, drills and regular practice, players can enhance their motor abilities. Basketballers' overall performances are enhanced when they concentrate more on such motor capabilities thus becoming more effective contributors to their teams' overall performance (Canli Umut, 2019). The handball players' performance and motor skills are very important. Povoas, et al. (2017) carried out on the motor abilities of handball players revealed that speed, agility, power and coordination directly affect a player's success in the game. Furthermore, this research also indicates that enhanced agility, accuracy and power will be achieved through improved motor abilities in these specific types of movements. Also, it established that there is a difference in handball players' level of motor abilities depending on their age as well as playing experience.

2. Materials and Methods

Selection of the subject: For the purpose of the present study, fifteen male basketball players and fifteen male handball players were selected randomly who participated in the Inter-University Competition for Manipur University and their ages ranged from 18 – 21 years.

Selection of variables: The following motor abilities variables were selected for this study:

- a) Speed
- b) Agility

Selection of test: To measure the speed ability by using the 20-meter dash test and agility ability by using Illinois agility test were selected as a test administered.

Criterion measure:

- a) Speed: To assess speed ability, the 20-meter dash test was conducted and the results were recorded in seconds.
- b) Agility: To assess agility ability, the Illinois agility test was conducted and the results were recorded in seconds.

Statistical Analysis: The collected data were entered into an Excel sheet and statistical analyses were conducted using the IBM SPSS software. The normality of statistical distribution was tested using descriptive statistics and an independent t-test was applied to examine differences between groups. The significance level used in the statistical analysis was 0.05.

3. Results and findings

To find out the significant differences in selected motor abilities variables between basketball and handball players, descriptive statistics and independent t-tests were employed. The level of significance was set at 0.05. The significance of the mean score difference for speed ability between basketball and handball players is presented in Table – 1.

Table – 1: Comparison of speed ability between basketball and handball players

Variables	Group	N	Mean	SD	df	t-value
Speed	Basketball Players	15	3.530	0.181	28	0.098
	Handball Players	15	3.536	0.152		

*Significant at 0.05 level of confidence for 1 and 28 (df) = 2.048.

In the above table no.1 revealed that the mean and standard deviation values concerning basketball players on the speed ability were 3.530 ± 0.181 whereas in the case of handball players, the same was 3.536 ± 0.152 respectively. This indicates that there was an insignificant difference in speed ability between basketball and handball players as the calculated t-value of 0.098 was less than the tabulated t-value of 2.048, significant at 0.05 levels.

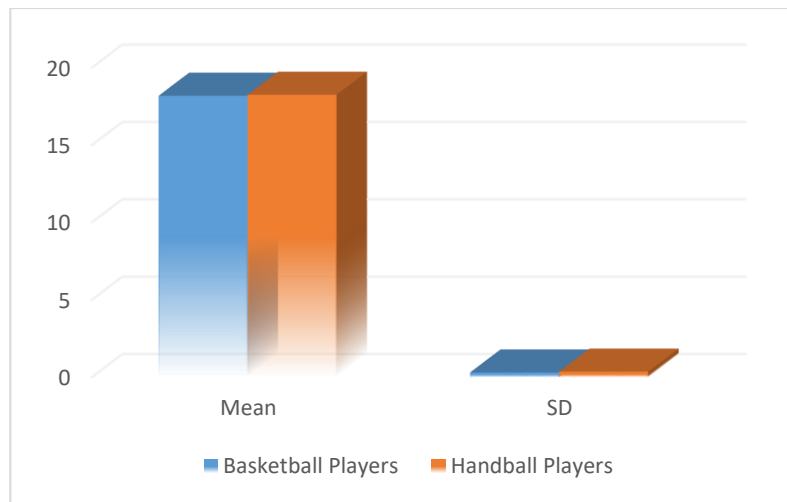


Figure 1: Mean score values of speed ability between basketball and handball players.

A graphical representation of mean values of speed ability between basketball and handball players was presented in Figure – 1.

The significance of the mean score difference for agility ability between basketball and handball players is presented in Table – 2.

Table – 2: Comparison of agility ability between basketball and handball players

Variables	Group	N	Mean	SD	df	t- value
Agility	Basketball Players	15	18.185	0.3	28	0.518
	Handball Players	15	18.247	0.354		

*Significant at 0.05 level of confidence for 1 and 28 (df) = 2.048.

In the above table no.2 revealed that the mean and standard deviation values concerning basketball players on the agility ability were 18.185 ± 0.3 whereas in the case of handball players, the same was 18.247 ± 0.354 respectively. This indicates that there was an insignificant difference in agility ability between basketball and handball players as the calculated t-value of 0.518 was less than the tabulated t-value of 2.048, significant at 0.05 levels.

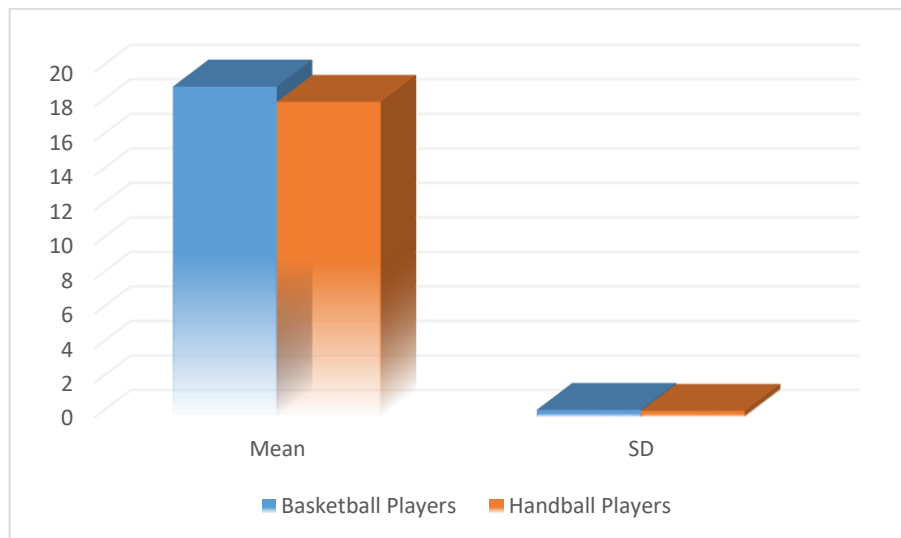


Figure 2: Mean score values of agility ability between basketball and handball players

A graphical representation of mean values of agility ability between basketball and handball players was presented in Figure – 2.

4. Discussion

From the above results and findings, based on Table no. 1 revealed that the mean and standard deviation values concerning basketball players on the speed ability were 3.530 ± 0.181 whereas, in the case of handball players, the same was 3.536 ± 0.152 respectively. This indicates that there was an insignificant difference in

speed ability has been found between basketball and handball players as the calculated t-value of 0.098 was less than the tabulated t-value of 2.048, significant at 0.05 levels. In the Table no.2 revealed that the mean and standard deviation values concerning basketball players on the agility ability were 18.185 ± 0.3 whereas, in the case of handball players, the same was 18.247 ± 0.354 respectively. This indicates that there was an insignificant difference in agility ability has been found between basketball and handball players as the calculated t-value of 0.518 was less than the tabulated t-value of 2.048, significant at 0.05 levels.

The relevant studies were carried out by K.S Varuna Raja Basaveswara and R. Srinivasa (2019) to find out the comparison of speed, agility and leg explosive power between basketball and handball male university players. The result concluded that no significant difference was found in speed and agility between basketball and handball male university players. Kumar Vikesh (2016) also found that no significant difference in agility ability. However, significant difference in speed ability between basketball and handball players. Singh L. Santosh (2019) also conducted a study on comparative study on selected motor abilities among cricket and softball players and the final results show that there is no significant difference found in speed, agility, spine flexibility and leg power between cricket and softball players. Dar Riyaz Ahmad (2016) also conducted a study to compare the Motor fitness of Basketball players and Handball players of Jammu and Kashmir State. The results concluded that there was no significant difference in agility component between Basketball and Handball players. But in speed, there was a significant difference between Basketball players and Handball players. In contrast result, Kumar Parmod (2014) studied the agility ability among handball and basketball players. The results conclude that there was a significant difference in agility ability between handball and basketball players. The finding was also supported by Singh Harvinder (2019). A similar study was also conducted by Kumar Anil et al. (2019) Comparison of physical fitness between basketball and handball players of Jammu and Kashmir. The study concluded that insignificant differences were found in flexibility and significant differences were found in the variable of speed and agility endurance between basketball and handball players. Kumar Ch Ravi (2021) studied the comparative study of speed among basketball and handball players of Khammam District in Telangana State and the results found that handball players have better speed compared to basketball Players. Similar studies were also conducted by Rami Arvind (2022) and the results show that there is a significant difference found in speed, agility, flexibility and explosive power between basketball and handball players. Yadav Devesh Singh and Chaudhary Manju (2016) conducted a study on selected physical fitness variables of Basketball and Handball Players of Lucknow. The researcher randomly selected (Basketball players: N=25 and handball players: N=25) from Lucknow District. Their age ranged between 14-18 years. The study concluded that significant differences were found in speed and insignificant found in flexibility of Basketball and handball players. Begum K Shahnaz (2019) also evaluated the selected motor fitness components and BMI in Male Basketball and handball Players of Amravati district (M.S). The study concluded that there is a significant difference found in flexibility and vertical jump but an insignificant difference in agility and BMI. Cherappurath Nafih (2015) compared the speed and agility between handball and basketball players of Pondicherry University. The researcher selected (30) male students from the Department of Physical Education and Sports, Pondicherry University their ages ranged from 18 to 24 years. The result of the study showed that handball players have greater speed than basketball players. However, no significant difference in agility between handball and basketball players. A similar study was also conducted by Sharma H. Surendra et al. (2018) Comparison of Speed, Endurance and Agility between the Lawn and Soft Tennis players of Manipur. The results show that there is no significant difference between Lawn and Soft Tennis Players of Manipur. Singh L. Santosh (2022) also studied the Analysis of Selected Motor Abilities among team games. The study concluded that there were insignificant differences between football and hockey players in muscular endurance and speed, whereas there was a significant difference in power between football and hockey players. Relevant study also conducted by Singh L. Santosh (2023) A comparative study on selected motor abilities between badminton and table tennis players. The results concluded that there was a significant difference obtained in Speed between the two groups. However, no significant differences were found in Muscular Strength and Muscular Endurance between Badminton and Table Tennis Players of Dhanamanjuri University, Manipur. Similar studies were also conducted by Dogra Sharmila (2015) and the results found that there is a significant difference in agility, speed and explosive power whereas an insignificant difference was found in flexibility between Handball and Basketball Players. More relevant studies were also conducted by V. Vikashpaul and Bhat Tahir Ramzan (2019). Comparative Study of Selected Motor Fitness Components between Handball and Basketball Players. The findings of the study showed that there was a significant difference in agility and explosive leg strength and insignificant differences in coordination and explosive shoulder strength of the handball and basketball players. Singh Bhubnehsvar (2019) conducted a similar study on the comparison of selected physical fitness components between basketball and volleyball players. The results show that there was a significant difference in speed, agility, cardiovascular endurance and muscular strength between basketball and volleyball players. Similar studies were also conducted by Mini Thomas and Babu.P (2019) on the speed and agility of Bishop Kurialacherry College between basketball and handball players. The results show that there was a significant difference between basketball and handball players in speed and agility.

5. Conclusion

It was concluded that an insignificant difference was found in the speed and agility abilities between basketball and handball players. It appears that both games requirespeed and agilityabilities for the effectiveness of the performance.Researchers believed from this study thatboth games sharesimilaritiesintheir nature of games such as attacking and defensive movement and both games are played by hand. Additionally,the sizes of the courtsare also almost similar because of this the study found insignificant differences in speed and agility abilities between basketball and handball players.

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