

Comparative Study of Agility between Volleyball and Basketball Players of Manipur

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How to cite this article: Shaikhom Premchand Singh, Takhellambam Inaobi Singh (2024) Comparative Study of Agility between Volleyball and Basketball Players of Manipur. *Library Progress International*, 44(3), 18848-18854.

ABSTRACT

The complex reaction ability, speed, acceleration, maximum speed, speed of whole-body change of direction, and agility represent the basic components of sports performance. Agility is one of the main determinants of performance in different team events. The objective of the study was to compare the agility between the volleyball and basketball players of Manipur. The researcher selected 60 players (30 each of volleyball and basketball games) between the 20-25 years of age from Manipur participated at state and national level selected randomly for this study. The SEMO Agility test was administered to assess the agility. An independent 't' test was employed to find out the significant difference in agility between the two games and the level of significance was set at 0.05. The significant mean difference in agility between the volleyball and basketball players was found as the calculated 't' = 2.81 is greater than the table value of 't' = 2.00 (P < 0.05). Therefore, the result of the study clearly showed significant difference in agility between the volleyball and basketball players of Manipur.

Keywords: Agility, Volleyball, Basketball.

Introduction

Sports game performance is characterized by high-speed actions, while sportsmen should make quick decisions and solve the sport-specific tasks occurring during the match. Based on this assumption, we can conclude that complex reaction speed, acceleration, maximum speed, speed of whole-body change of direction, and agility represent the basic components of sports performance, mainly in sports games and combat sports (fencing, boxing, aikido, karate, etc.). Agility is one of the main determinants of performance in soccer, basketball, ice hockey, and handball (Little & Williams, 2005). However, definitions of this quality differ among sports researchers. The vast majority of tests purported to assess agility are tests for change of direction speed. The basic movement patterns of team sports require the player to perform sudden changes in body direction in combination with rapid movements of limbs, and the ability of the player to use these maneuvers successfully will depend on other factors such as visual processing, reaction time, perception, and anticipation. The purpose of most agility tests used at the time was simply to measure the ability to rapidly change body direction and position in the horizontal plane. Illinois agility test has long been standardly used for testing agility. The same situation exists among the coaches. They are not acquainted with adequate motor tests used for the determination of agility performance in the modern understanding. Illinois test is still very frequently used for the assessment of agility and speed in sports games (Young, McDowell, & Scarlet, 2001; Gambetta, 1996; Young, Hawken, & McDonald, 1996; Buttifant, Graham, & Cross, 1995). This test has several versions in order to suit the purposes of individual sports games. Simply said, they think that the performance in this test will show them the quality of speed abilities of sportsmen. In a

real sports match in sports games, however, players do not have to run from line to line; they neither have to run around some cones. When we take a closer look at the test and analyze the sportsman's movement, we can see that speed and agility in team sports represent complex psycho-motor skills (Verchoshansky, 1996). They involve moving the body as rapidly as possible, but agility has the added dimension of changing direction. Speed is classically defined as the shortest time required for an object to move along a fixed distance, which is the same as velocity, but without specifying the direction (Harman & Garhammer, 2008). In practical terms, it refers to the ability to move the body as quickly as possible over a set distance. However, in reality, the issue is slightly more complex because speed is not constant over the entire distance and can, therefore, be divided into several phases: acceleration, maintenance of maximum speed, and deceleration (Plisk, 2008). Agility is most often defined as the ability to change direction rapidly (Altug, Altug & Altug, 1987). This can take many forms, from simple footwork actions to moving the entire body in the opposite direction while running at a high speed. Thus, agility has a speed component, but there are other important components of this trait. The basic definition of agility is too simplistic because it is now thought to be a much more complex info, involving not only speed but also balance, coordination, and the ability to react to a change in the environment (Plesk, 2008). Měkota (2000) considers agility to be a physical capability, which, by its essence, belongs among "mixed" physical capabilities. It is determined by the quality of regulation (CNS) and analyzers, as well as the type of muscle fiber. Therefore, agility should be superior to speed, quickness, and coordination abilities. Maximum speed, and agility are probably specific qualities and relatively unrelated to one another.

Objective

The objective of the study was to find out the significant difference in agility between the volleyball and basketball players of Manipur.

Hypothesis

Based on the literature reviewed and understanding of the study, it was hypothesized that there would be no significant difference in agility between volleyball and basketball players.

Methods

For the purpose of the study, total 60 male state and national level players between 20 to 25 years of age, 30 each from volleyball and basketball games were randomly selected who were registered under the Manipur Volleyball Association (MVA), the Manipur Basketball Association (MBA), and different reputed clubs in Manipur. For testing the agility of volleyball and basketball players, SEMO Agility Test was administered and the best trial was recorded to the nearest of a second out of three given trials (Johnson & Nelson 1982). The descriptive and the independent 't' test were applied to analyze the characteristics of the data and compare the means of data between the agility of volleyball and basketball players, respectively. The level of significance was set at a 0.05 and the SPSS 20 Version was used to analyze the data.

Result

The mean (M), standard deviation (SD) and standard error (SE) were determined by using the descriptive statistics. Further, the independent 't' test was applied to find out the significant mean difference in agility between the volleyball and basketball players. The result of the statistical procedure is shown in the table 1.

Table-1: Mean Comparison of Agility between the Volleyball and Basketball Players

Variable	Group	N	Mean	SD	MD	SED	df	t	P
Agility	Volleyball	30	13.51	1.02	0.73	0.26	58	2.81*	0.01
	Basketball	30	12.78	1.00					

*Significance at 0.05 level, where, 't'(0.05) (58)=2.00

Table 1 clearly revealed that the mean (M) and standard deviation (SD) of agility for volleyball and basketball players were 13.51 ± 1.02 and 12.78 ± 1.00 , respectively. Further, it shows that there was the significant mean difference in agility between the volleyball and basketball players as the calculated 't' =2.81 is greater than the table value of 't' = 2.00 ($P < 0.05$). The graphical representation of mean comparison is shown in the figure 1. Therefore, the result of the study clearly showed significant difference in case of agility between the volleyball

and basketball players in combined of state and national level of Manipur.

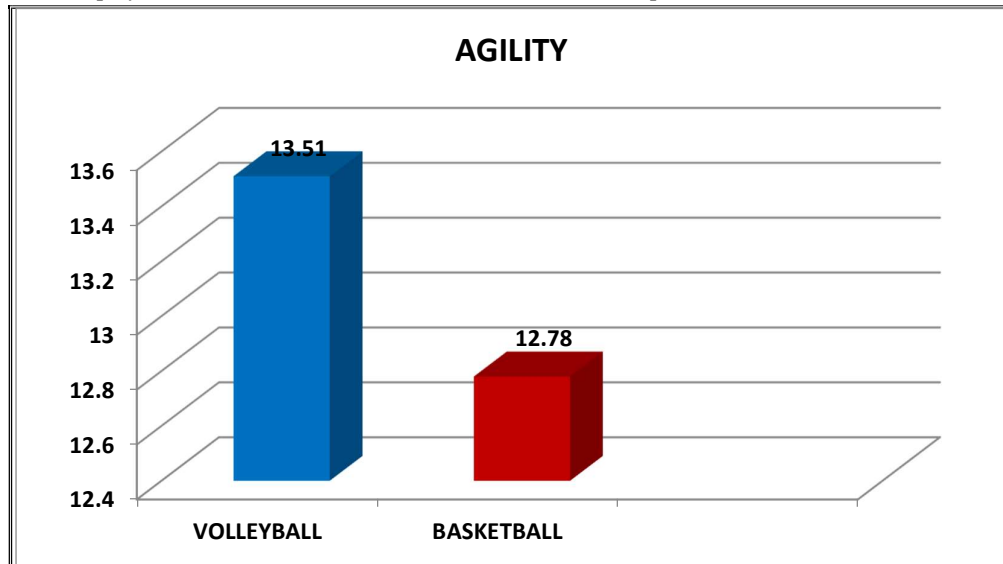


Fig. 1. Mean Comparison of Agility between the Volleyball and Basketball Players

Discussion

The main purpose of the study was to compare the agility between volleyball and basketball players. It has been observed from the result of the study that there was found significant difference in agility, which was assessed by using the SEMO Agility Test between the volleyball and basketball players. The significant result might be based on the differences of nature of the games, mobility, motor qualities, physical and physiological demands, system of the games, and particularly difference of the utility of agility by the players of these two games. Based on the result of the study, the assumed null hypothesis was rejected and alternative hypothesis was accepted.

Conclusion

Agility is one of the important performance limiting motor components, which is required in all the dynamic games. High agile quality is necessary for a good volleyball and basketball players. However, the nature of agility required in the volleyball and basketball players may be different. In the present study, there was significant difference in agility between the volleyball and basketball players of Manipur.

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