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Comparison of speed and explosive strength of volleyball and basketball university level male players

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Abstract

Purpose of the present study was to compare volleyball and basketball university male players in relation to their speed and explosive strength. Total 104 players (51 volleyball players and 53 basketball players) were selected from east zone Tripura University, Agartala and KIIT, Bhubaneshwar where east zone volleyball and basketball male university level tournament held in the session 2015-16. The age range of volleyball and basketball male players is 18 to 25 years. To know the nature of the data descriptive statistics was applied and to compare the volleyball and basketball university male players in relation to Speed and Explosive Strength independent t-test was applied. All statistical data were analysis with SPSS 16.0. Level of significance was set at 0.05.The mean and SD of volleyball male players is 7.02 and 0.85 in relation speed. The mean and SD of basketball is 6.68 and 0.737 in relation speed. The t-value is 2.14 is significant at 0.05 level. The t-value shows significant difference was found between the mean score of the volleyball players and basketball players in comparison to scores of speed. The mean score of volleyball and basketball university male players are 37.64 & 38.81 and SD 8.012 & 8.44 in relation explosive strength. The t-value is 0.723 is no significant at 0.05 level. The t-value shows no significant difference was found between the mean score of the volleyball male players and basketball male players in comparison to scores of Explosive strength. On the basis of findings of the study it is clear that significant difference was found between volleyball male players and basketball male players in comparison to Speed. On the other hand there is no significant difference was found between volleyball male players and basketball male players in comparison to Explosive Strength.

Keywords: Volleyball Players, Basketball Players, Speed, Explosive Strength, Male.

1. Introduction

In the area of games and sports the performance of players is mainly depend on the fitness level. The top most sporting country is extremely a large amount aware of these facts and focus on the development of the necessary physical fitness components. To develop good fitness the coaches and trainers start training in the early stage of childhood and concentrating on some important fitness components which are very important for better performance in various sports and games such as speed, flexibility, agility, Explosive strength and endurance etc. For example a basketball player to give good performance he must possess speed, explosive strength, cardio-vascular endurance, agility is the main components for good performance of the players.

Explosive strength, speed, and agility are abilities that make an important contribution to efficient movement in various games and sports during performing any technique. The level of these abilities, that is, the motor potential, is most often measured using various motor tests with and without the ball (Colli et al., 1987). In basketball practice, motor tests are the most suitable and applicable because they are implemented in conditions similar to those of training or competition (Erculj et al., 2010). Therefore, to attain optimum performance in activities where speed is the main factor, above mentioned components should be woven together.

Physical fitness is an individual quality of body that differs from person to person. Physical fitness is effected by many factors they are social, genetically and environmental. Physical environment like temperature, humidity, climate, altitude also affects the physical fitness of an individual. Altitude (refers as the height of a place, above sea level) also effect the physical fitness of person. The composition of atmosphere is same in all over the world I.e. 79% nitrogen 21% oxygen and small quantities of other gases. The problem human face at altitude is not strictly the shortage of oxygen but its low partial pressure of oxygen (PO2) which decreases with decrease in barometric pressure. It is found that at forty five hundred meters (Beth 2000). The PO2 is decreased by much as 40% in comparison to pressure at sea level. Further at high altitude temperature decreases, with decrease in temperature pressure also decrease. The body feels a stressful condition known as hypoxic hypoxia.

The physical fitness was the sum of five motor abilities namely; speed, strength, endurance, flexibility and co-ordination abilities and their complex form like strength, endurance, maximum strength, explosive strength, maximum speed, and agility were the basic prerequisites of human motor action (Ahmed, 2010). Therefore, the sports performances depend to a greater extend on these abilities. Speed and Explosive strength play the main roll in the fitness level of individual. Speed and Explosive strength both combine together to perform any motor movements and both are very important components for excellent performance in particular games and sports.

1.1 Objectives:

Objective of the present study was to compare Volleyball and basketball university male players in relation to their speed and explosive strength.

1.2 Hypothesis:

It was hypothesized that there will be no difference between Volleyball and basketball university male players in relation to their speed and explosive strength.

2. Methodology

For the purpose of the present study total 104 players (51 volleyball players and 53 basketball players) were selected from east zone Tripura University, Agartala and KIIT, Bhubaneshwar where east zone volleyball and basketball male university level tournament held in the session 2015-16. The age range of volleyball and basketball male players is 18 to 25 years.

2.1 Selection of Variables:

Keeping the feasibility criterion in mind, the researcher selected the following variables for the present study:

- Speed
- Explosive Strength

2.2 Criterion Measures:

- Speed was measured by 50 m dace and recorded in second.
- Explosive Strength was measured by the help of vertical jump and recorded in cm.

2.3 Statistical Analysis:

For determining the nature of the data descriptive statistics was applied and to compare the volleyball and basketball university male players in relation to Speed and Explosive Strength independent t-test was applied. All statistical data were analysis with SPSS 16.0. Level of significance was set at 0.05.

3. Results and findings

Table No-1

Descriptive and comparative table of Speed score of Volleyball and Basketball male university players

Group	N	Mean	SD	SD Std. Error of Mean	t-value	p-value
Volleyball male players	51	7.028	0.859	0.120	2.148*	0.034
Basketball male players	53	6.682	0.737	0.101		

** Significant at 0.05 level*

Table-1: Indicate that the mean score of Volleyball Male & Basketball Male Players are 7.028 & 6.682 and SD 0.859 & 0.737. The t-value is 2.148 is significant at 0.05 level. The t-value shows significant difference was found between the mean score of the Volleyball Male & Basketball Male Players in comparison to scores of speed. The speed of Basketball Players is greater than Volleyball players.

Fig. 1: Mean and SD values of Volleyball male players and Basketball male players to compare the Speed through Graphical presentation

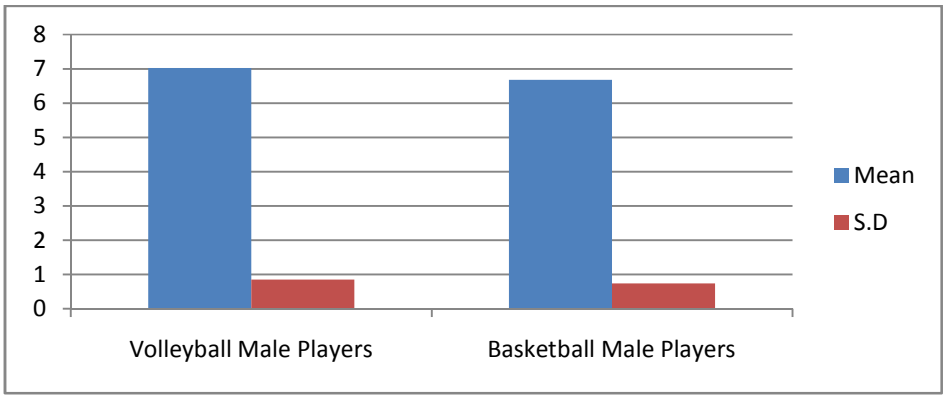


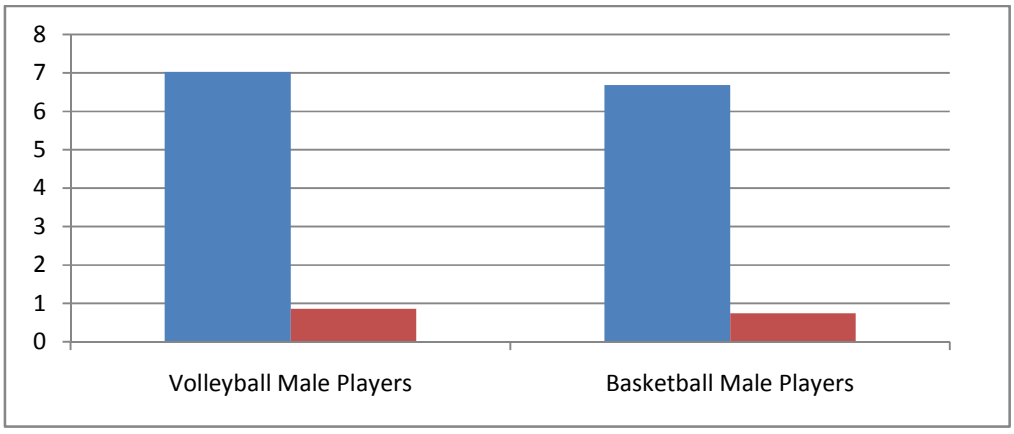
Table No- 2

Descriptive and comparative table of Explosive Strength of Volleyball and Basketball male university players

Group	N	Mean	SD	SD Std. Error of Mean	t-value	p-value
Volleyball male players	51	37.64	8.012	1.121	0.723	.471
Basketball male players	53	38.81	8.445	1.160		

Table-2: Indicate that the mean score of Volleyball male players & Basketball male players are 37.64 & 38.81 and SD 8.012& 8.445. The t-value is 0.723 is no significant at 0.05 level. The t-value shows no significant difference was found between the mean score of the Volleyball male players and Basketball male players in comparison to scores of Explosive strength.

Fig. 2: Mean and SD values of Volleyball male players and Basketball male players to compare the Explosive Strength through Graphical presentation



4. DISCUSSION OF FINDINGS

The mean score of Volleyball Male & Basketball Male Players are 7.028 & 6.682 and SD 0.859 & 0.737. The t-value is 2.148 is significant at 0.05 level. The t-value shows significant difference was found between the mean score of the Volleyball Male & Basketball Male Players in comparison to scores of speed. The mean score of Volleyball male players & Basketball male players are 37.64 & 38.81 and SD 8.012& 8.445. The t-value is 0.723 is no

significant at 0.05 level. The t-value shows no significant difference was found between the mean score of the Volleyball male players and Basketball male players in comparison to scores of Explosive strength.

The game volleyball requires greater vertical jump performance (Gladden & Colacino 1978; Fleck et al. 1985; Marques, et al. 2006 & 2008) for spiking, blocking and jump serve. Similarly basketball requires vertical jump performance (Hoffman et al. 1996; Hoffman & Maresh 2000) for rebound, jump shot and dunking. So both games require greater degrees of explosive power in terms of vertical jump. As a result there was no significant difference elicited between the groups on explosive power. In case of speed basketball players posses higher speed than the volleyball players probable reason may be that, basketball game have intermittent characteristics and employ sprint speeds during attack and counterattack actions in the games, whereas volleyball generally utilizes reaction speed.

5. CONCLUSIONS

After the analysis of data on the basis of outcome following conclusions may be drawn:

- On the basis of findings of the study it is clear that significant difference was found between Volleyball Male & Basketball university Male Players in comparison to Speed ($t = 2.148$, $p < .05$).
- On the basis of findings of the study it is clear that no significant difference was found between Volleyball Male & Basketball university Male Players in comparison to Explosive Strength ($t = 0.723$, $p > .05$).

Initially it was hypothesized that there will be no difference between Volleyball Male & Basketball university Male Players in comparison to Speed Strength is not accepted at 0.05 level of significance. On the other hand it was hypothesized that there will be no difference between Volleyball Male & Basketball university Male Players in comparison to Explosive Strength is accepted at 0.05 level of significance.

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