International Journal of Yoga, Physiotherapy and Physical Education
Online ISSN: 2456-5067; Impact Factor: RJIF 5.24
www.sportsjournal.in
Volume 2; Issue 3; May 2017; Page No. 52-53

Comparison of Speed in Basketball players according to their playing position

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Abstract
The purpose of this study was to compare speed, and some anthropometric characteristics of male Basketball Players according to their playing position. The sample of the study comprised of male Basketball players participating in north zone intervarsity tournament (17-24 aged) (n=48) guard (13), Forward (21), Center (15). Within the scope of the study, the following techniques were applied: 20-meter speed test for determining speeds of the players, height& weight for determining anthropometric characteristics of the players. The players were informed of the test protocols before the tests and they voluntarily participated in the study. Statistical analysis of the tests was conducted by using one way analysis of variance in SPSS 20.00 program. Level of significance was set at 0.05. After the tests, no significant difference was seen in speed among guards, centers and forward.

Keywords: Basketball players, playing position, Speed.

Introduction
Basketball is a team sports game that can be said as an ordered series of jobs that every player should do with respect to the position and role within a defined model of tactics (TRNINIĆ, 2006) [10]. Motor abilities play an integral role in the selection of young basketball players and their progression in playing performance (ERČULJ, 2003) [3]. Basketball players with superior abilities of speed, strength, agility have a great advantage in full-court as well as half-court game situations (FORAN & POUND, 2007) [4]. A number of studies confirm that better physical abilities have advantageous effect on better basketball skills (Hoffman, Tenenbaum, Maresh. C.M, & Karemer, 1996) [6]. Each of the playing positions has its own characteristics, team role & importance. There are three basic player types in basketball who perform different roles in the play and also differ in terms of playing characteristics (Sampaio, Janeira, Ibáñez, & Lorenzo, 2006) [9]: guards, forwards and centers. If a specific player type is to show a high-level of performance and efficiently fulfill his playing role, he must not only have adequate technical and tactical knowledge but also suitable dimensions of physical status. The physical characteristics of an athlete are important predictive factors of whether the athlete will reach the top level of their chosen sports discipline (SALLET, 2005) [8] Individual playing roles require a specific movement structure and, consequently, an adequate level of motor abilities (motor potential) (Dežman, Trninić, & Dizdar, (2001)) [1]; (Trninić, Karalejić, Jakovljević, & Jelaska, 2010a) [12]; (Trninić, Karalejić, Jakovljević, & Jelaska. 2010b) [11] Speed as a psychomotor ability and the related attributes have an important effect on basketball playing performance (Erčulj, (2004).) [2]
In this study, speed was assessed using speed test in basketball. The main aim of this study was to analyze the level of speed of different university basketball players according to their playing position. The data obtained could greatly assist both basketball coaches and basketball researchers for developing various training programmes.

Material & methods
Participants
Total, 48 male Basketball players aged (17 – 25yrs) from interuniversity competition were randomly selected as participants and they volunteered to participate in the study participated in this study.

Anthropometric measurements
Body height (to nearest 0.1 cm) and body mass (to nearest 0.05 kg,) were measured were chosen as the general anthropometric variables.

Speed test
20-meter speed test was applied on the participants. Test was performed by determining a 20-meter distance and making the players run from a starting point and measurement was recorded in seconds.

Analysis of Data

Table 1: Descriptive statics

Position	N	Height			Weight		
		Mean	Std. Deviation	Mean Std. Error	Mean	Std. Deviation	Mean Std. Error
Guard	13	176.30	4.49	1.24	66.46	4.03	1.11
Forward	21	181.80	3.44	.751	70.85	5.99	1.30
Center	15	186.33	4.49	1.16	80.20	4.30	1.80

Table-1: shows the demographic characteristics of Basketball players according to their playing position. The mean height Guard was 176.30 cm, Forward 181.80 and Centers186.33 cm. The mean weight of Guard was 66.46 kg, Forward 70.85and Center were 80.20 kg.

Table 2: One Way Analysis of Variance (ANOVA)

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	24.585	37	.664	2.193	.082
Within Groups	3.333	11	.303		
Total	27.918	48			

Level of significance was 0.05 %

The results of Table 2 showed that insignificant differences have been found with regard to speed among guard, forward and center male basketball players as the P-value (Sig.) .082 was found higher than the 0.05 level of significance (P>0.05). Since F-value was found insignificant, therefore, there is no need to apply post hoc test.

Discussion & findings

The study done on the university level basketball players showed no significant difference in the variable speed among players on the basis of playing positon. Prior to this only 1 study that has investigated the effect of playing position on sprint performance of basketball players and found a significant difference in 20-m sprint time between guards and forwards only (Hoare, 2000) [5]. In addition, no significant difference between playing position was reported in the same study on male players (Hoare, 2000) [5]. These authors suggested that despite their size and weight, centers are as fast as smaller players. The lack of significant effect of playing position on sprint performance in the present study could also be explained by the fact that the distance chosen was too long. As various video analyses of various competitions have shown that the high-intensity runs performed by players of national level lasts on average 1.7 seconds, which approximately corresponds to distances of 10-m or shorter (McInnes, Carlson, Jones, & McKenna, 1995) [7]. As a consequence, sprint tests over shorter distances might be more appropriate to determine any difference among players.

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