



## Analysis of Selected Performance Related Physical Fitness Components Among Guard Forward and Center Playing Positions of Basketball Players

### KEYWORDS

Explosive Power, Speed, Guard, Forward and Center.

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**ABSTRACT** *The purpose of the study was to analyse the selected performance related physical fitness components among different playing positions such as guard, forward and center playing positions of basketball players. To achieve this purpose, seventy women players were randomly selected as subjects. The age of the players were ranged from 18 to 25 years. Among the performance related physical fitness components, explosive power and speed were selected as criterion variables. The explosive power and speed were assessed by using vertical jump and 50 mts run tests respectively. The data was analysed by applying ANOVA. The level of significance was fixed at .05 level. Scheffe's post-hoc test was employed were 'F'ratio found significant. The results of the study stated that there was a significant difference among guard, forward and post players on explosive power and speed.*

### INTRODUCTION

Sport is an institutionalized competition activity that involves vigorous physical exertion or the use of relatively complex physical skills by individual whose participation is motivated by a combination of intrinsic and extrinsic factors (Joy C. Coakely, 1987).

The game of basketball is a fast game conducted on a time basis. Basketball is probably the leading ball game in the world as far as action occurrence is concerned. This is one of the reasons why this game has become one of the most popular sports in the world (Vaughan Thomas, 1972). Basketball is one of the most popular and dynamic sports in the world and one of the most widely viewed. Basketball is a fast moving game and is equally important for the athlete to be able to perform the skills in a variety of directions and in a controlled manner (Scott Lucett, 2013). Basketball is a team game, individual execution of fundamental skills is essential for team success (Hal Wissel, 2012). The main objective at the attack in the game of basketball is to rotate the ball through the opponents by means of dribbling, passing and shooting and score more number of baskets than the opponents with certain rules and regulations. The game basketball offers a wide range of opportunity for the development of speed, endurance, strength, agility, dynamic, flexibility to all parts of the human body. It has also proved to be a highly competitive sport around the world. Now a day's both men and women are taking part at all levels. It's a moment-oriented game, probably most fascinating and exciting leading ball game.

Each player on a basketball team has a position to play. It is related to role, ability and skill. The three basic positions in basketball are guard, forward and center. Some coaches use other names such as point, wing and inside player. The center is usually the tallest player, with forwards next and guards being the smallest. Center and forwards tend to be the best rebounders, while guards are often the best ball handlers. Guards also tend to play outside more than forwards and center (Jerry V. Krause, 2000).

Explosive power mainly depends on strong muscle. The

abdominal and leg strength play a vital role on a performance of jumpers. In order to develop the abdominal and leg strength, jumping exercise play a major role. Explosive power represents one of the most important features of track and field. The most peculiar factors for explosive power development must be formed in neuro muscular properties. Speed is a magic work in sport. The person who can run faster, throw harder and move quickly, change direction more suddenly, stop more abruptly and accelerate more rapidly than his opponent is likely to be a better athlete and win more contests coaches are constantly working for speed and more speed (Reuban B. Frost, 1987).

### METHODOLOGY

#### Subjects

Seventy women basketball players were selected as subjects at random. The age of the subjects were ranged between 18 to 25 years. Variables

Among the performance related physical fitness variables in basketball, explosive power and speed were selected as criterion variables. The explosive power and speed were assessed by using vertical jump and 50 mts run tests respectively.

#### Statistical Procedures

The one-way analysis of variance (ANOVA) was used to find out the significant differences, if any, among the different playing positions of basketball players on selected criterion variables separately, whenever the 'F' ratio was found to be significant, the Scheffé S test was applied as post-hoc test to determine the paired mean differences. In all the cases, .05 level of confidence was used to test the significance.

### RESULTS

The data on explosive power and speed was analysed for statistically significant difference among guard, forward and center using analysis of variance and it is given in Table I.

**TABLE I**  
ANOVA ON EXPLOSIVE POWER AND SPEED AMONG GUARD FORWARD AND CENTER PLAYING POSITIONS OF WOMEN BASKETBALL PLAYERS

Variables	Guard Players	Forward Players	Center Players	SOV	SS	df	MS	'F' Ratio
<b>Explosive Power</b>								
Mean	31.60	33.50	37.80	B	409.09	2	204.55	6.75*
S.D	5.24	4.66	4.04	W	2029.49	67	30.29	
<b>Speed</b>								
Mean	7.77	7.52	8.65	B	14.47	2	7.24	17.66*
S.D	0.65	0.69	0.52	W	27.51	67	0.41	

\*Significant at .05 level of confidence

(The table value required for significance at .05 level of confidence with df 2 and 67 was 3.141).

Table I showed that the mean values of guard, forward and center players on explosive power of women basketball players were 31.60, 33.50 and 37.80 respectively. The mean values of guard, forward and center players on speed of women basketball players were 7.77, 7.52 and 8.65 respectively. Further, Table I clearly shows that the obtained 'F' ratio value of explosive power and speed are 6.75 and 17.66 was greater than the required table value 3.141 for significance at .05 level of confidence with df 2 and 67. The results of study showed that there was a significant difference that exists among guard, forward and center players on explosive power and speed of women basketball players. Since, three groups were compared, Scheffé S test was applied as post hoc test to find out the paired mean difference on explosive power and speed and it was presented in Table II.

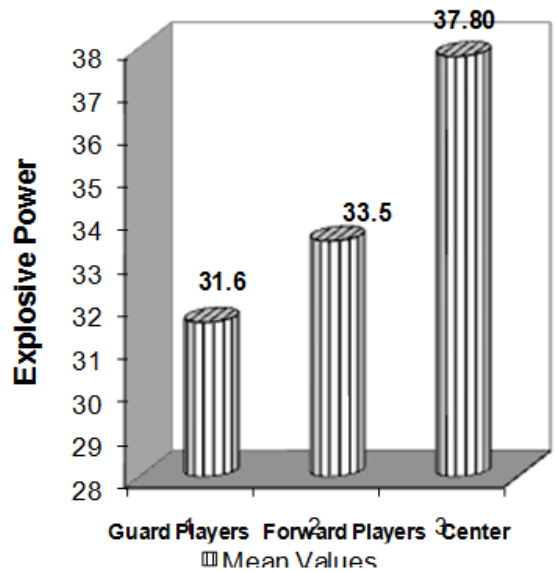
**TABLE II**  
THE SCHEFFE'S POST-HOC TEST ON EXPLOSIVE POWER AND SPEED

Variables	Guard-Players	Forward Players	Center Players	MD	CI
Explosive Power	31.60	33.50	-	1.90	3.92
	31.60	-	37.80	6.20*	4.37
	-	33.50	37.80	4.30*	3.92
Speed	7.77	7.52	-	0.25	0.45
	7.77	-	8.65	1.13*	0.50
	-	7.52	8.65	0.88*	0.45

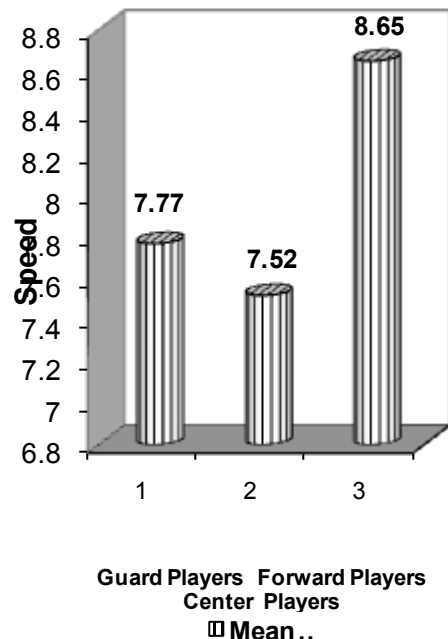
\*Significant at .05 level of confidence.

Table II showed that the mean difference values between guard and center players; forward and center players on explosive power were 6.20 and 4.30, which were greater than the confidence interval value 4.37 and 3.92 respectively at .05 level of confidence. Further, Table II showed that the mean difference values between guard and center players; forward and center players on speed were 1.13 and 0.88, which were greater than the confidence interval value 0.50 and 0.45 respectively at .05 level of confidence.

The results of the study showed that there was a significant difference between guard and center players; forward and center players on explosive power and speed. And also the results of the study showed that there was no significant difference was found between guard and forward players on explosive power and speed.



**Figure I:** The Mean Values of Guard, Forward and Center Players on Explosive Power of Women Basketball Players



**Figure II:** The Mean Values of Guard, Forward and Center Players on Speed of Women Basketball

**DISCUSSION**

The results of the study showed that there was a significant difference among different playing positions of basketball players on explosive power and speed of women basketball players and also the study concluded that the center players were better in explosive power than forward and guard players; the forward players were better in speed than guard and center players. And also no sig-

nificant difference was found between guard and forward players on explosive power and speed. It may be due to fact that the different positioned basketball players such as guard, forward and center players were differed on physique, body composition, ability, skill, responsibilities and role. According to Bale (1991), the centers had the largest measures of the physique and the body composition followed by forwards and then the guards. He also point out that the post were much taller, had longer limb length, hip widths, and were more muscular. These findings are also in agreement with Jerry V. Krause, (2000), the post is usually the tallest player, with forwards next and guards being the smallest. Richard Latin et al., (1994), stated that the guard, forward and center players were differed on height, weight, speed, explosive power and body fatness. He also point out that, the guards were the smallest and leanest players and centers were the largest players, had the highest percent body fat and poorest in agility. Michael J. Lamonte (1999), study conformed that the centers were significantly taller and greater in mass than guards and forwards.

### CONCLUSIONS

The center players were better in explosive power than forward and guard players; the forward players were better in speed than guard and center players. And there is no significant difference was found between guard and forward players on explosive power and speed.

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