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A COMPARATIVE STUDY OF AGILITY AND EYE-HAND COORDINATION BETWEEN GUARD AND FORWARD PLAYERS IN BASKETBALL



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Short Profile

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ABSTRACT:

The purpose of the study was to compare agility and eye-hand coordination between guard and forward players in basketball. Seventy two basketball players (Guards: $N_1 = 36$ and Forwards: $N_2 = 36$) of age group 18-25 years were selected from different colleges affiliated to Guru Nanak Dev University, Amritsar, Punjab, India. All the participants were

informed about aim and methodology of the study and they volunteered to participate in this study. The height of the subjects was measured with anthropometric rod to the nearest 0.5 cm. The weight of subjects was measured by using portable weighing machine to the nearest 0.5 kg. The Illinois agility test was used to measure agility and ball transfer test was used to determine the eye-hand co-ordination. The independent samples t-test was utilized to assess the differences between guards and forwards players. The results of present study indicated that guard players had significantly greater agility ($p < 0.05$) and coordination ($p < 0.05$) than forward players.

KEYWORDS

Basketball, agility, co-ordination, guards, forwards.

INTRODUCTION:

The performance of players is influenced by many factors (Ortega et al., 2008). Physical abilities (i.e. agility, coordination etc) are very important predictors of performance (Tsunawake et al., 2003; Ziv&Lidor, 2009).In basketball, coordination motor skills are considered as an important aspect of performance(Dembinski, 1997;Glasauer&Nieber, 2000; Kubaszczyk, 2001).Basketball players need a high level of speed, explosiveness and agility (Boone & Bourgois, 2013).Basketball player is required to continuously be in movement over a certain period while hopping, jumping and changing directions (Mazumdar& Edwin, 2000).Basketball is one of the complex technical team games and differences in performance between players of different region and varying ability levels are quit nature. The game of basketball requires the application of variety of different abilities (Angyan, et al., 2003; Jelcic, et al., 2002; Viswanathan&Chandrasekaran, 2011). Basketball is a game with a significant distribution of participants according to a playing position (Hughes & Bartlett 2002; Ziv&Lidor, 2009).Generally basketball players are divided as guards, centersand forwardsregarding playing position, and each position has its own characteristics and role in the game.In basketball sport, forwards take more shots and performed more walking and standing than guards and centers (Abdelkerim et al., 2007).During a basketball game guards cover a significantly higher distance and perform at higher intensity levels than centers and forwards (Abdelkrim et al.,2007).Agility is an important characteristic for players occupying the guard positions (Boone & Bourgois, 2013).Guards areinvolved in high intensity activities such assprints and dribbles more often than forwards. Forwards take more shots and domore walking and standing than guards (Abdelkerim et al., 2007; Drinkwater et al., 2008).Therefore, the purpose of this study was to compare agility and eye-hand coordination between guards and forwards players in basketball.

MATERIALS & METHODS

Subjects:

A total seventy two male basketball players(Guards: $N_1 = 36$ and Forwards: $N_2 = 36$) of age group 18-25 years were selected from different colleges affiliated to Guru Nanak Dev University, Amritsar, Punjab, India. The purposive sampling method was used to select the subjects for the present study.All the participants were informed about aim and methodology of the study and they volunteered to participate in this study.The age of each subject was calculated from the date of birth as recorded in his institute.

Selection of Variables and Tests:

The study was conducted on selected physical fitness variables: Agility and Coordination.The necessary data was collected by administering various tests.The height of subjects was measured by using the standard anthropometric rod. Weight was measured with portable weighing machine.The Illinois agility test (Getchell,1985) was used to measure agility and ball transfer test(Kansal, 2008)was used to determine the eye-hand co-ordination.

Table-1. Demographic Characteristics of Guard and Forward Players

Variables	Test Used	Measurement Units
Agility	Illinois Agility Test (Getchell,1985)	Seconds
Co-ordination	Ball transfer Test (Kansal, 2008)	Seconds

Statistical analyses:

Values are presented as mean values and SD. Independentsamples t tests were used to test if population means estimated bytwo independent samples differed significantly. Data was analyzedusing SPSS Version 16.0.

RESULTS

Table-2. Demographic Characteristics of Guard and Forward Players

VARIABLES	Guard Players (N ₁ = 36)		Forward Players (N ₂ = 36)	
	Mean	SD	Mean	SD
Height (cm)	183.25	6.15	181.64	9.51
Weight (kg)	73.02	7.58	72.25	9.53

Table-2: shown the demographic characteristics of Players. The mean height of guard players was 183.25 cm and forward players were 181.64 cm. The mean weight of guard players was 73.02 kg and forward players were 72.25 kg

Table-3. Comparison of Agility and Eye-Hand Coordination between Guard and Forward Players.

VARIABLES	Guard Players (N ₁ = 36)		Forward Players (N ₂ = 36)		t-value
	Mean	SD	Mean	SD	
Agility	16.94	0.90	19.79	0.85	13.86*
Co-ordination	17.98	1.07	19.94	1.84	5.54*

*Significant at 0.05 level

Table 3 presents the comparison of agility and eye-hand coordination between guard and forward players. The guards players were found to have significantly better agility (p<0.05) than the forward players. Similarly co-ordination (p<0.05) was significantly greater in guard players as compared to forward players.

DISCUSSIONS& CONCLUSION

In the present study agility and eye-hand coordination of guard and forward basketball players have been evaluated and compared. This study indicates the existence of agility and eye-hand coordination differences among the guard and forward basketball players. The findings of present study revealed that guard players were found to have significantly better agility than the forward players. The findings of better co-ordination the present study are in agreement with previous study conducted by Boone & Bourgois (2013), they observed that guards are generally characterized by higher agility. These players often penetrate to the basket to score therefore; these sudden accelerations with changes in direction are frequently performed by guards. Therefore, agility is an important characteristic for players occupying the guard positions (Boone & Bourgois, 2013). Similarly, guards showed better co-ordination than forwards. The findings of better co-ordination in guards are in agreement with previous study of Abdelkrim et al. (2007), they reported that during a basketball game guards cover a significantly higher distance and perform at higher intensity levels than forwards. Significant differences have been observed among guards and forwards male basketball players with regard to agility and co-ordination. The observed results of the present study are in agreement with the study of Trninic et al. (1999), they analyzed the difference between the guards and forwards on some anthropometric characteristics. Jelacic et al. (2002) also, confirmed differences in anthropometric characteristics of elite junior basketball players that play at different team positions. The agility measured by Illinois agility test and coordination measured by ball transfer test in basketball players was better than volleyball players. This indicates that playing basketball requires fast directional short turns and eye hand coordination during the games (Ko & Kim, 2005). It is concluded that guard players had better agility and co-ordination than forward players. Further investigations are needed on the above studied variables along with physiological variables to assess relationships among them and with performances in basketball.

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