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A comparative study of explosive leg strength and explosive arm strength between basketball and volleyball players

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Abstract
The main purpose of the present study was to compare the motor fitness variables explosive leg strength and explosive arm strength between male basketball players and male volleyball Players. A total of 40 state level male subjects age ranged between 16-19 years were selected for this study from Basketball & volleyball Coaching Centre stadium, jind (Haryana). The purposive sampling method was used to obtain the objective of the study. All the subjects, after having been informed about the objective and protocol of the study, gave their consent and volunteered to participate in this study. They were further divided into two groups of 20 each (N1=20; Male basketball Players and N2 =20; Male Volleyball Players).The explosive leg strength measure with the help of standing broad jump and explosive arm strength measure with the help of 6lbs medicine ball throw test. After the collection data the t- test was employed to find out the significant differences between male basketball players and male volleyball Players. To test the hypotheses, the level of significance was set at 0.05. The results revealed significant differences between male basketball players and male volleyball players on the motor fitness variables i.e. explosive leg strength and explosive arm strength.

Keywords: explosive leg strength, explosive arm strength, male basketball players, male volleyball players

Introduction
Explosive strength is required in all types of sports. Explosive strength is one of the contributing factors to success in basketball and volleyball game. Male Basketball and Male Volleyball players required well-developed explosive strength for fast reaction movements and swift movements. In the game of basketball explosive leg strength and explosive arm strength require for vertical jump, passing and throwing the ball in basketball rings. In the game of volleyball explosive leg strength and explosive arm strength require for vertical jump and smashing to the volleyball. Explosive strength is combination of strength and speed abilities. It can be defined as the ability to overcome resistance with high speed. The explosive strength is of different nature in cyclic and acyclic movement. Explosive strength magnitude is a function of three factors: intermuscular coordination, intramuscular coordination, and the force with which the muscle reacts to a nervous. As a result explosive strength is highly specific to the nature of a movement and for its developments of specific movements have to be used. So in the both game basketball and volleyball explosive strength is very important.

Method and Procedure
Selection of subjects
Subjects for the study were selected purposively from Basketball & volleyball Coaching Centre stadium, jind (Haryana). For the purpose of the study 20 male basketball players and 20 male volleyball players age ranged between16-19 were selected randomly. The male basketball players and male volleyball Players both the groups were measured on the motor fitness variables Explosive leg strength and explosive arm strength. The male basketball players and male volleyball players Explosive leg strength was assessed by standing broad jump test in feet and inches. The male basketball players and male volleyball players Explosive arm strength was measured by 6lbs medicine ball throw test.

Statistical Analysis
Descriptive statistics such as mean and standard deviation of the motor fitness variables i.e. explosive leg strength and explosive arm strength. Independent t-test was employed to compare between male basketball players and male volleyball players. The level of significance was set at 0.05 level. The statistical analysis was conducted by using SPSS 16 software.

Results
Table 1: Mean, Standard Deviation, Standard Error of the Mean, t- value and p- value of Male Basketball players & Male Volleyball Players

Variables	Mean		SD		SEM		T-Value	P- Value
	Basketball	Volley Ball	Basketball	Volley Ball	Basketball	Volley Ball		
Explosive Leg Strength	7.05	5.48	0.49	0.78	0.11	0.17	7.55	.040
Explosive Arm Strength	5.07	3.76	0.77	0.93	0.17	0.20	4.82	.296

*Significant at 0.05 level Degree of freedom=38

Explosive Leg Strength

Table no. 1 the descriptive statistics shows the mean and SD value of male basketball players on the variable of explosive leg strength as 7.05 and 0.49 respectively. However, male volleyball players had mean and SD values as 5.48 and 0.78 respectively. The 't' - value - 7.55 as shown in the table above was found statistically significant (p<.05).

Explosive Arm Strength

The descriptive statistics shows the mean and SD value of male basketball players on the motor fitness variable of explosive arm strength as 5.07 and 0.77 respectively. However, male volleyball players had mean and SD values as 3.76 and .93 respectively. The 't' – value -4.82 as shown in the table above was found statistically insignificant (P>.05).

The comparison of mean scores of both the groups has been presented graphically in figure 1.

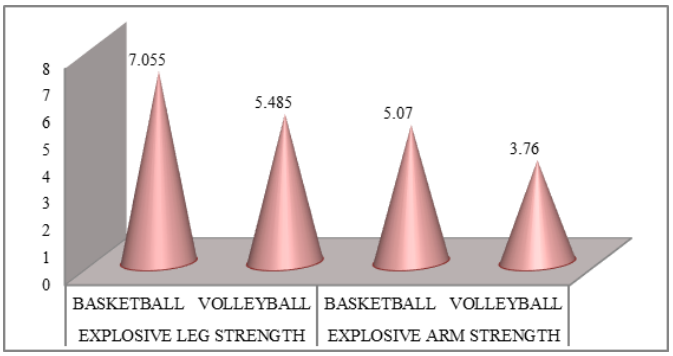

Fig 1

Figure 1 Graphical representation of mean scores of male basketball players and male volleyball players on the variables i.e. Explosive leg strength, Explosive arm strength

Conclusion

It is concluded from the above findings that the insignificant difference was found between male basketball players and male volleyball players on the motor fitness variable explosive arm strength and found significant difference between male basketball players and male handball players on explosive leg strength.

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