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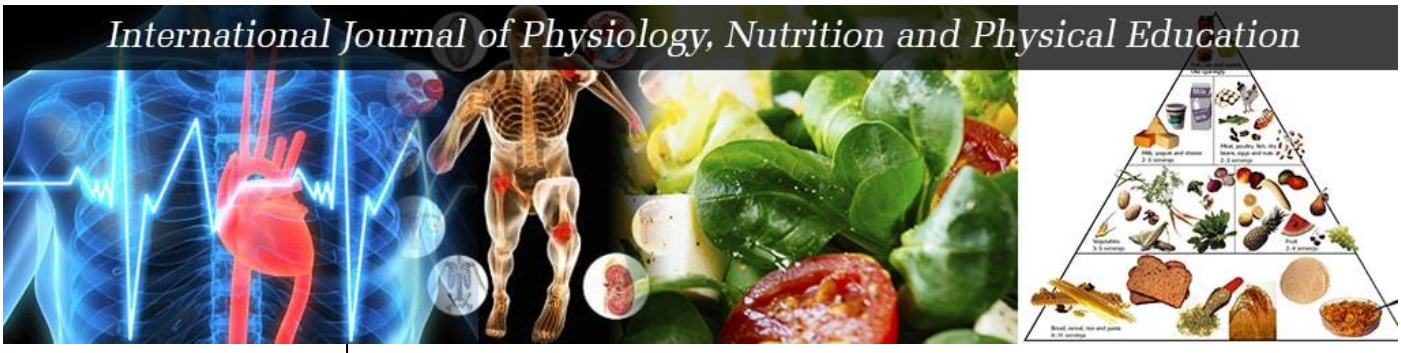

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Manisha
Research Scholar,
Department of Physical Education MDU Rohtak,
Haryana, India

Correspondence
Manisha
Research Scholar,
Department of Physical Education MDU Rohtak,
Haryana, India

A comparative study of vertical jump among different games players

Manisha

Abstract
The present study has been designed to investigate the vertical jump among basketball, weightlifters and badminton players who participated at inter-university level. For accomplish the study 20 male basketball players, 20 male players from weightlifting and 20 male players of badminton were randomly selected as sample. The age of all samples was ranged 18-28 year. Male Sports persons who participate at inter-university level were selected as samples. To accomplish the study vertical jump test was used in the study. All samples were selected from the Maharshi Dayanand University Rohtak. The obtained data were analyzed by applying one way analysis of variance. The level of significance was set at 0.05. We find out that basketball players are having high vertical jump in comparison of weightlifters and badminton players.

Keywords: Vertical jump, basketball, weightlifters, badminton

Introduction
The vertical jump is defined as the highest point that the athlete can touch with a permanent jump, the athlete can touch from a permanent position. If the athlete is allowed to take one or more steps before jumping, then the measurement of the jump is erroneous, because the athlete will change some energy developed in the given step in the propulsive force that generates the higher elevation. If you want a large vertical jump, you will have to create a powerful lower body, a powerful upper body and a jump technique with sound. For any athlete to jump, at a great height, the slow flexing fibers present in the leg muscles will be determined by a fast connection distribution to a significant degree. This distribution is a genetic determination. The vertical jump is one of the most explosive physical movements executed in the game. In many sports, the more athletes are able to jump, the chances of success are higher in that discipline. Basketball and volleyball are two of the most prominent examples of the game, where the correlation is clear. The jumping ability of the athlete is also an indicator of athletic ability, because there is a clear correlation between the ability to jump and the athlete who runs at short distances.

Objectives of the study
To main objective of the study is to compare the leg power among basketball, weightlifters and badminton players.

Hypothesis of the study
There would be no significant difference among basketball, weightlifting and badminton players in their leg power.

Research process and methodology
The sample for the present study was 20 male players from basketball, 20 male players from weightlifting and 20 male players from badminton were randomly selected as sample. The age of all samples was ranged 18-28 year. Male Sports person who participate at inter-university level were selected as samples.

Tools and techniques
Vertical jump test was used to complete the study.

Objective: to measure the strength of the muscles of the legs.

Required equipment: Chalk to mark the wall, tape measure or marked wall.

Process: The athlete stands on a wall and reaches the hand near the wall. The tip of the fingers is marked or registered, keeping the feet resting on the ground. This is called permanent access height. Then, the athlete is away from the wall and as high as possible, using both hands and feet to help the body appear in the upward direction. Jumping techniques can use a countercurrent movement or (see vertical jump technique). Try to touch the wall at the highest point of the jump. The permanent reach is the difference in the distance between the height and the jump height is the score. Three of the best efforts have been recorded.

Score: The height of the jump is usually recorded as a distance score.

Statistical method
The obtained data were analyzed by applying one way analysis of variance in order to determine the leg power among basketball, weightlifters and badminton players. The level of significance was set at 0.05. For obtaining reliable result special statistics software (SPSS-20) was used.

Table 1: Descriptive statistics

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Basketball	20	52.05	6.84	1.53	48.84	55.25	41	65
Weightlifter	20	46.75	7.15	1.59	43.40	50.09	36	58
Badminton	20	51.90	7.60	1.69	48.34	55.45	39	65
Total	60	50.23	7.50	.96	48.29	52.17	36	65

The table no 1 shows the characteristic of selected sample among all discipline and it was observed that mean of basketball players were 52.05±6.84 and weightlifter players were 46.75±7.15 and mean and standard deviation of Badminton players were 51.90±7.60 respectively. The minimum std. error was observed which shows homogeneity between selected samples. So, now we can perform our parametric statistics.

Table 2: Analysis of Variance Self-esteem

	Sum of squares	Df	Mean square	F	Sig.
Between Groups	364.23	2	182.11	3.50	.03
Within Groups	2960.50	57	51.93		
Total	3324.73	59			

*significant at 0.05 level

An analysis of table no.2 reveals that there would be a significant difference among basketball, weightlifting and badminton players in their leg power. Because significant value is less than level of significance which is 0.05 since the calculated significance value is found significant, therefore we need to perform Post-hoc analysis.

Table 3

Multiple Comparisons						
Dependent Variable: VERTICALJUMP LSD						
(I) Games	(J) Games	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Basketball	Weightlifters	5.30000*	2.27900	.024	.7364	9.8636
	Badminton	.15000	2.27900	.948	-4.4136	4.7136
Weightlifters	Basketball	-5.30000*	2.27900	.024	-9.8636	-.7364
	Badminton	-5.15000*	2.27900	.028	-9.7136	-.5864
Badminton	Basketball	-.15000	2.27900	.948	-4.7136	4.4136
	Weightlifters	5.15000*	2.27900	.028	.5864	9.7136

*. The mean difference is significant at the 0.05 level.

Table no 3 shows that basketball players are having more vertical jump in comparison of weightlifters. A significant difference was found between them. Badminton players are also having more vertical jump in comparison of weightlifters because a significant difference was found between them. But there is not much difference in vertical jump of badminton and basketball players.

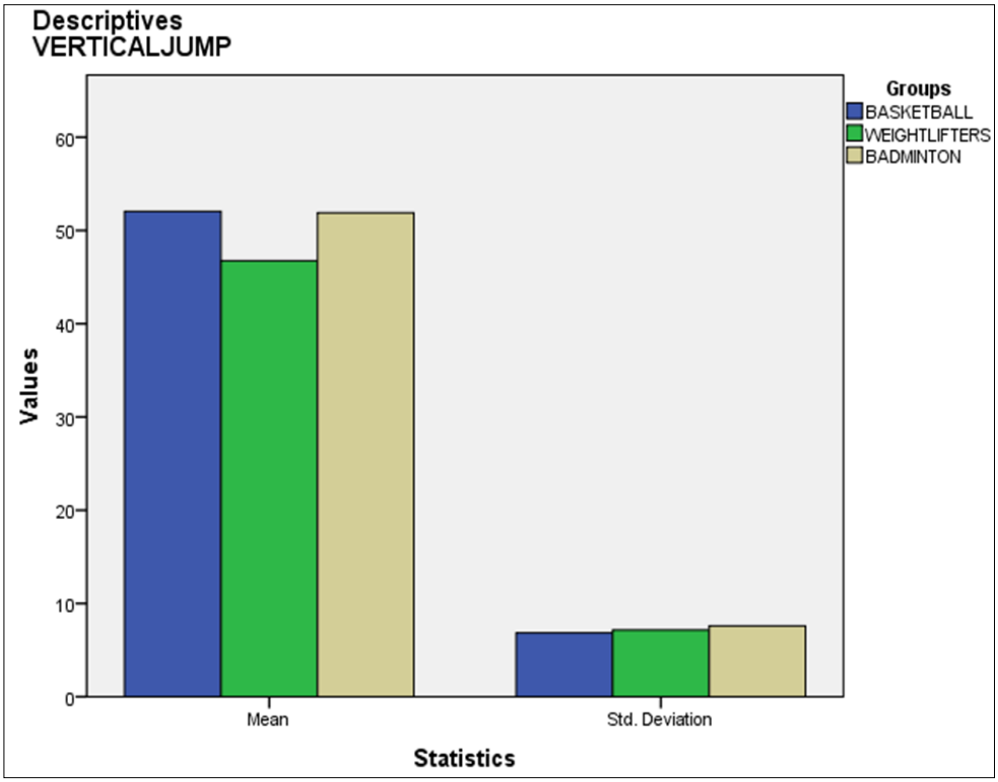

Fig 1: The graphical presentation of mean and standard deviation of basketball, weightlifters and badminton players in their vertical jump

Conclusion

After analysis the obtained results it was observed that there would be a significant difference among basketball, weightlifting and badminton players in their leg power. Basketball players are having more vertical jump in comparison of weightlifters. A significant difference was found between basketball players and weightlifters. Badminton players are also having more vertical jump in comparison of weightlifters because a significant difference was found between them. But there is not much difference in vertical jump of badminton and basketball players. So we can say that basketball players are having high vertical jump in comparison of weightlifters and badminton players.

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