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Comparision of selected physical fitness components of badminton and basketball players

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Abstract
Purpose of the present study was to differentiate the badminton and basketball players in relation to selected physical fitness components. 50 male players, among them 25 Badminton and 25 Basketball players from Guru Ghasidas Vishwavidyalaya Bilaspur (C.G) were selected as subject during the inter faculty sports week tournament. The physical fitness variables for the present investigation are speed, agility, explosive strength and grip strength. The data was analyzed and compared with the help of SPSS Software in which arithmetic mean, standard deviation, standard error of mean, and t-test used to compare the data. The mean and SD value of Badminton players in comparison to speed were 7.344 and 453 and the mean and SD of Basketball players were 6.682 and .434, the t-value is 5.279. The mean and SD values of Badminton players in relation to agility were 10.542 and 1.182 and the mean and SD values of Basketball players were 8.850 and .662, the t-value is 6.241. To compare the explosive strength the mean and SD values of Badminton players were recorded as 26.369 and 1.516 and the mean and SD values of Basketball players were 29.332 and 1.575, the t-value is 6.775. The mean and SD values of Badminton players of grip strength were 41.166 and 3.338 and the mean and SD values of Basketball players were 36.518 and 2.503, the t-value is 5.567. Significant difference was found between badminton and basketball players in relation to speed (t = 5.279, $p<.05$). Significant difference was found between badminton and basketball players in compare to agility (t = 6.241, $p<.05$). Significant difference was found between badminton and basketball players in compare to explosive strength (t = 6.775, $p<.05$). Significant difference was found between badminton and basketball players in relation to grip strength (t = 5.567, $p<.05$).

Keywords: Badminton, basketball, speed, agility, explosive strength and grip strength

1. Introduction
In prior time physical fitness has been characterize from alternate points of view and assessed by utilizing numerous techniques. The origination of physical wellness in view of military or athletic reason which has survived hundreds of years since the old Chinese and Athenian (Sharkey1991) [14]. In twentieth century, the meaning of physical fitness has moved gradually towards a work-or living-related origination. Physical fitness is capacity to perform daily activity with vitality and sharpness without under fatigue and still appreciate recreation time interests and to meet the unpredicted crises. Physical activity is a critical part to stay fit and sound. It keeps us dynamic over the long haul and we likewise can rest easy. Diverse individuals have a great deal of view with respect to physical fitness. As per specialist, the best possible working of physiological frameworks is physical fitness. Actually, physical wellness is a straightforward term with a wide significance. For a normal man, Physical fitness means the ability to do the standard work with no weariness or effort and subsequent to doing his work he has likewise vitality to do some more work and the recuperation is speedier. Physical wellness is all the more then the ownership of quality and continuance (Sharma, 2010) [15]. It intends to keep up great physical wellness with the ability to do ones regular assignment to take part in recreational interests and to meet crises, when they emerge. Truth be told, physical fitness is controlled by the person with fan with vigorous.
Physical fitness differs from individual to individual, work environment, and change with time and circumstance. It is an presently the bring up out, where to keep the standard of ideal fitness. From the physiological perspective physical fitness may state to be capacity of the body to embrace and recuperate from strenuous work out (Chaudhary, 1998) [2]. The physical fitness was the entirety of five motor capacities to be specific;

speed, strength, endurance, flexibility and co-ordination abilities and their complex form like strength, endurance, maximum strength, explosive strength, maximum speed, and agility were the essential requirements of human motor activity (Ahmed, 2010) [1]. In this manner, the sports performance depends to a more prominent stretch out on these capacities. Physical fitness is basic for person in each stroll of life. Level may extremely from a typical man to that of a universal competitor. The more anxiety ought to be set downward on the physical wellness of people. Just the physical fitness and wellbeing of individuals can make a country solid.

Swami Vivekananda also said, "Today we do not need Bhagwat Geeta but football fields," In fact; he emphasized on physical fitness as well as good health of our citizens so that they could ameliorate the nation's honour and prestige (Sharma, 2010) [15]. The purpose of the study is to compare physical fitness components namely speed, agility, explosive strength and grip strength between male badminton and basketball players belonging to Guru Ghasidas Vishwavidyalaya Bilaspur (C.G.).

2. Methodology

For the purpose of the present study total 50 male players, among them 25 Badminton and 25 Basketball players from Guru Ghasidas Vishwavidyalaya Bilaspur (C.G) were selected as subject during the inter faculty sports week tournament. The physical fitness variables for the present investigation are speed, agility, explosive strength and grip strength.

The data was collected by application of tests like, 50yards dash, shuttle run, standing broad jump, and grip strength by grip strength dynamometer. The data was analyzed and compared with the help of SPSS Software in which arithmetic mean, standard deviation, standard error of mean, and t-test used to compare the data.

Table 1: Selected variables and their criterion measures

S.N.	Variables	Criterion measures
1	Explosive Strength	Standing Broad Jump
2	Speed	50 meter Dash
3	Agility	Shuttle Run
4	Grip Strength	Grip Strength dynamometer

3. Results and findings

We have used mean and standard deviation to analyze the results. Mean and standard deviation of the selected dimensions of Badminton and Basketball players were computed. Its results have been shown in next tables.

Table 2: Descriptive and comparative table of Badminton and Basketball players in relation to speed

Group	N	Mean	Standard Deviation	Std. Error Mean	p-value	t- value
Badminton Players	25	7.344	.453	.0907	.000	5.279*
Basketball Players	25	6.682	.434	.0868		

Table 2 depicts that the mean and standard deviation values of speed of Badminton and Basketball players. The mean and SD values of Badminton players were recorded as7.344 and.453 and the mean and SD values of Basketball players were 6.682 and .434, the t-value is 5.279.

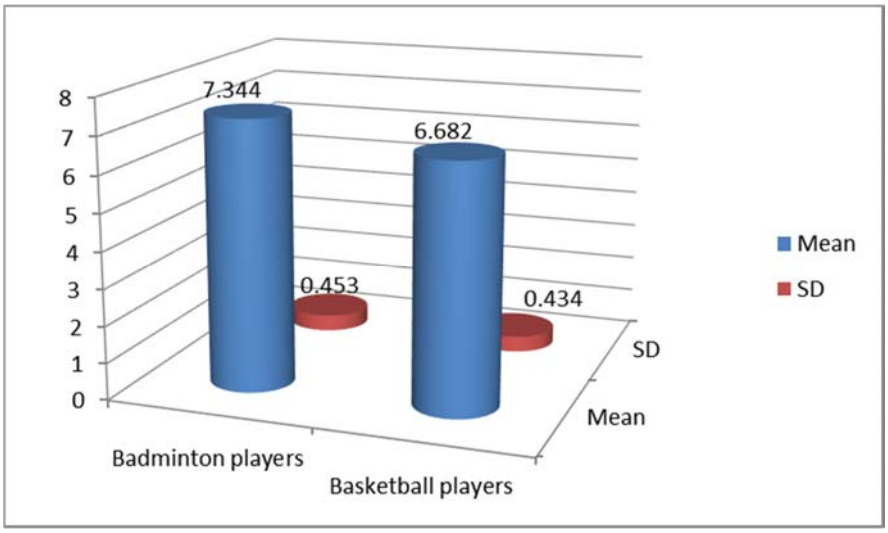

Fig 1: Graphical representation of comparison badminton and basketball players in relation to speed

Table 3: Descriptive and comparative table of Badminton and Basketball players in relation to Agility

Group	N	Mean	Standard Deviation	Std. Error Mean	p-value	t- value
Badminton Players	25	10.542	1.182	.236	.000	6.241*
Basketball Players	25	8.850	.662	.132		

Table 3 reveals that the mean and standard deviation values of agility of Badminton and Basketball players. The mean and SD values of Badminton players were recorded as10.542 and 1.182 and the mean and SD values of Basketball players were 8.850 and .662, the t-value is 6.241.

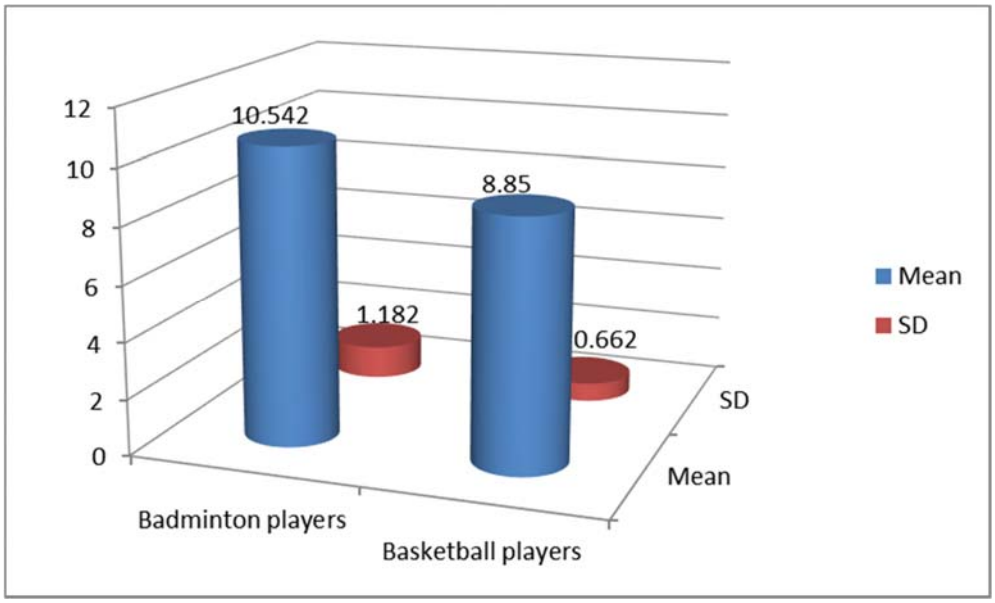

Fig 2: Graphical representation of comparison badminton and basketball players in relation to agility

Table 4: Descriptive and comparative table of Badminton and Basketball players in relation to Explosive strength

Group	N	Mean	Standard Deviation	Std. Error Mean	p-value	t- value
Badminton Players	25	26.369	1.516	.303	.000	6.775*
Basketball Players	25	29.332	1.575	.315		

Table 4 shows that the mean and standard deviation values of explosive strength of Badminton and Basketball players. The mean and SD values of Badminton players were recorded as 26.369 and 1.516 and the mean and SD values of Basketball players were 29.332 and 1.575, the t-value is 6.775.

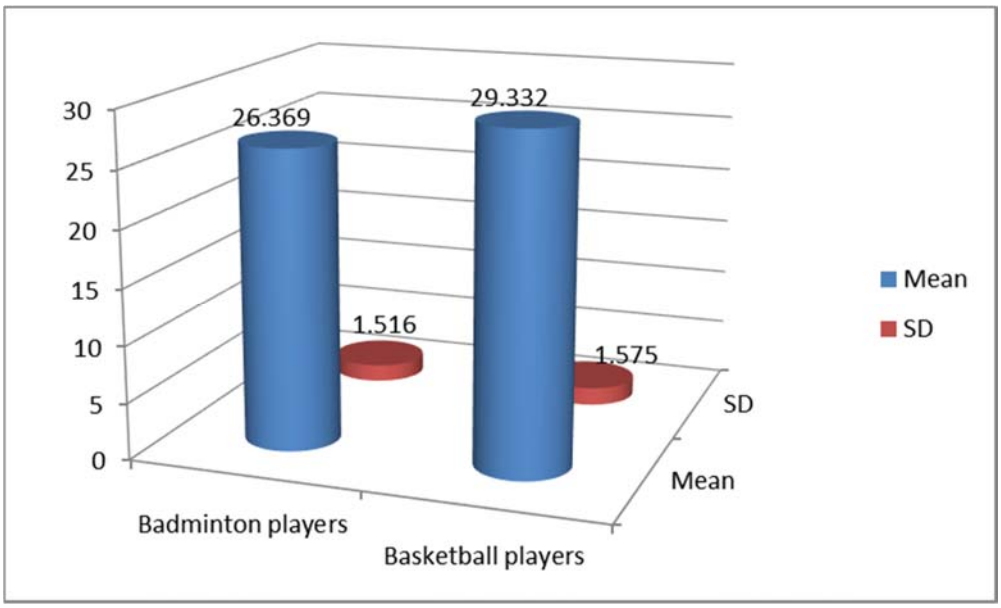

Fig 3: Graphical representation of comparison badminton and basketball players in relation to explosive strength

Table 5: Descriptive and comparative table of Badminton and Basketball players in relation to Grip Strength

Group	N	Mean	Standard Deviation	Std. Error Mean	p-value	t- value
Badminton Players	25	41.166	3.338	.667	.000	5.567*
Basketball Players	25	36.518	2.503	.500		

Table 5 shows that the mean and standard deviation values of grip strength of Badminton and Basketball players. The mean and SD values of Badminton players were recorded as 41.166 and 3.338 and the mean and SD values of Basketball players were 36.518 and 2.503, the t-value is 5.567.

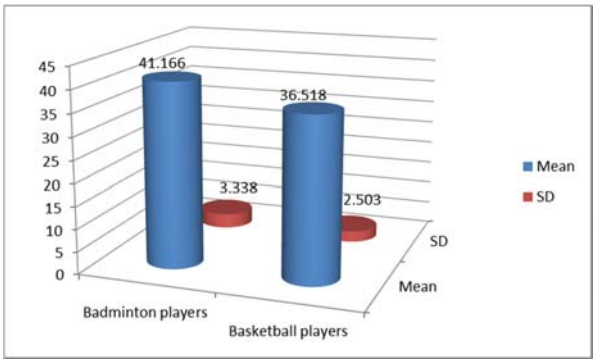

Fig 4: Graphical representation of comparison badminton and basketball players in relation to grip strength

4. Discussion

The mean and SD value of Badminton and Basketball players in comparison to speed were 7.344 & 453 and 6.682 and .434, the t-value is 5.279 that shows the significance difference between badminton and basketball players. Basketball players has greater speed compare badminton players because Basketball game comes under fastest game in all games, so players require excellent speed for better performance in the match. The mean and SD values of Badminton and Basketball players in relation to agility were 10.542 & 1.182 and 8.850 & .662, the t-value is 6.241. Result shows that significance difference was found between badminton and basketball player in comparison to agility because basketball players needs excellent speed and agility for quick movement during the game. To compare the explosive strength the mean and SD values of Badminton and Basketball players were recorded as 26.369 & 1.516 and 29.332 &1.575, the t-value is 6.775 that show the significance difference between badminton and basketball players in comparison to explosive strength. Basketball players has greater explosive strength compare to badminton players because basketball players requires good explosive strength to perform jumping skills like that layup shot, jump shot, receiving the ball with jump these skills play very important role for excellent performance. The mean and SD values of Badminton and Basketball players of grip strength were 41.166 & 3.338 and 36.518 & 2.503, the t-value is 5.567 shows difference of both the game players in relation grip strength. Badminton players have greater grip strength comparison to basketball players because grip strength is important for both the game to perform particular skill efficiently but the nature of the gripping the equipment is different. So badminton players have greater grip strength.

5. Conclusions

Significant difference was found between badminton and basketball players in relation to speed ($t = 5.279$, $p<.05$). Significant difference was found between badminton and basketball players in compare to agility ($t = 6.241$, $p<.05$). Significant difference was found between badminton and basketball players in compare to explosive strength ($t = 6.775$, $p<.05$). Significant difference was found between badminton and basketball players in relation to grip strength ($t = 5.567$, $p<.05$).

Initially it was hypothesized that there will be no significant difference between badminton and basketball players in comparison to speed, agility, explosive strength and grip strength is not accepted at 0.05 level of significant.

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