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Comparison of Flexibility and Speed Between the Badminton and Tennis Players

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Abstract

The purpose of the study to comparison of flexibility and speed parameters between the badminton and tennis players. For this study, total thirty (N=30) subjects, fifteen ((N=15) each from badminton and tennis players were selected randomly. The age of the subjects ranged between 17 to 19 years were selected as a subject of the present study, those who have participated at least state level and above junior level tournament.The subjects are selected from the reputed clubs of Manipur. The pertaining data was collected by administering the sit and reach test for flexibility and 50-yard dash test for speed respectively. The pertaining data of flexibility and speed was expressed in the unit of centimetres and seconds respectively. The Descriptive and Independent 't' test statistical techniques were employed to find out the characteristic of data and significant differences of flexibility and speed between the badminton and tennis players. The level of significance was set at 0.05. There was foundinsignificant differences of flexibility between the badminton and tennis players as the calculated 't'=0.94 is less than the tabulated 't'=2.048 at 0.05 level of confidence. However, the mean value of badminton player is greater than the tennis players of flexibility parameters. And in the case of speed, there was found significant differences between the badminton and tennis players as the calculated 't'=3.65 is greater than the tabulated 't'=2.048 at 0.05 level of confidence.The result of the study showedinsignificant differences of flexibility between the badminton and tennis players. However, the mean value of badminton player is greater than the tennis players of flexibility parameters. And, there were significant differences of speed between the badminton and tennis players.

Keywords: Flexibility, Speed, Badminton and Tennis.

1. Introduction

Badminton and Tennis are racket sports. There is a need for high physical fitness efficiency in players.Physical fitness is the backbone of any game and sport. Without physical fitness, any player can't reach the top level of performance. Physical fitness includes those qualities which will permit an individual to perform life activities involving speed, strength, agility, power and endurance and to engage in various kinds of physical activities required of modern-day living including sports and athletics, and to be able to maintain optimum amount of

fitness for the individual involved (Troestes,1957). Elaborates on physical fitness as the "capacity of an individual to perform given physical tasks involving muscular effort" (Mathews, 1978).

Racket sports are characterized by being acyclical disciplines, which combine very intense physical load cycles with short breaks, allowing incomplete recovery from the efforts performed (Martínez, 2014). Flexibility and speed are one of the most important physical fitness components of any game. Flexibility can improve performance and reduced risk of injury. Hockey (1993) in his own word defined it as a functional capacity of the joints to move through a full range of motion during performance.The racket games players use their flexibility to reach, dive and turn to cover all parts of the court. It is an advantage to have an above-average flexibility level of the trunk and shoulder region for sports (Chin et al., 1995).

And speed plays a vital role in the performance and skill of any game and sport. A highly speed person can perform quickly and easily in any performance or skill. Speed is an integral part of every sport and can be expressed as any one of, or combination of, the following: maximum speed, elastic strength (power) and speed endurance.Racket players require speed and explosiveness to generate striking power (Guillot et al., 2015). A more powerful drive enables faster, more accurate, and more challenging ball hits for the opponent (Wang & Li, 2023). The quick movements and reflexes are crucial role for the best performance of racket sports. Excellent speed allows for more effective court coverage and better-timed strikes (Chen, 2023 & Liu, 2023). Thus, speed is important for both defending against and launching attacks (Bulent, 2019 &Zhang, 2023).

Racket flexibility, including swing motion and shaft stiffness, directly impacts a player's strength and grip, allowing them to generate power and control shots. Speed ability helps to easily cover the whole court in a short period of time, resulting in the best performance. Therefore, flexibility and speed are very important fitness components of a racket game. Both play a vital role in enhancing the best performance.

2. Objective

The objective of the present study is

i. To investigate the significant differences of flexibility between the Badminton and Tennis players.
ii. To investigate the significant differences of speed between the Badminton and Tennis players.

3. Statement of Problem

Physical fitness is the backbone of any game and sports. Therefore, acknowledging and understanding the importance of physical fitness, the researcher decided to select the study as"Comparison of Flexibility and Speed between the Badminton and Tennis Players."

4. Hypothesis

It was hypothesised that there might be significant difference of flexibility and speed parameters between the Badminton and Tennis players.

5. Methods

5.1 Selection of Subjects

For this study, total thirty (N=30) male subjects, fifteen ((N=15) each from badminton and tennis players divided into two group were selected randomly. The age of the subjects ranged between 17 to 19 years were selected as a subject of the present study, those who have participated at least state level and above junior level tournament. The subjects are selected from the reputed clubs of Manipur.

5.2 Collection of Data

The pertaining data on flexibility and speed parameters were collected on thirty (N=30) subjects, fifteen (N=15) each from badminton and tennis players by administering the sit and reach test and 50-yard

dash test respectively. The pertaining data of flexibility and speed was expressed in the unit of centimetres and seconds respectively.

5.3 Data Analysis

The Descriptive and Independent 't' test statistical techniques were employed to find out the essential characteristic of data and significant mean differences of flexibility and speed between the badminton and tennis players. The level of significance was set at 0.05.

6. Results

The pertaining data of flexibility and speed were treated by using the Descriptive analysis to find out the mean (M) and standard deviation (SD) respectively. The Independent 't' test was employed to find out the significant mean differences of flexibility and speed between the badminton and tennis players as shown in table 1.

Table 1:

The Descriptive and Mean Comparison of Flexibility and Speed Between theBadminton and Tennis Players

Variables	Group	N	M	SD	t-value	Sig. p-value
Flexibility	Badminton	15	36.80	5.12	**0.94**	0.36
	Tennis		34.73	6.82		
Speed	Badminton	15	6.86	0.50	**3.65**	0.00
	Tennis		7.69	0.72		

Significant at 0.05, where tabulated $t_{(0.05)}(28)= 2.048$

Insignificant at 0.05, where tabulated $t_{(0.05)}(28)= 2.048$

Table 1 reveals that the flexibility parameter, the mean (M) and standard deviation (SD) of badminton and tennis were 36.80±5.12 and 34.73±6.82 respectively.

For the speed parameter, the mean (M) and standard deviation (SD) of badminton and tennis were 6.86±0.50 and 7.69±0.72 respectively.

There was found insignificant differences of flexibility between the badminton and tennis players as the calculated 't'=0.94 is less than the tabulated 't'=2.048 at 0.05 level of confidence. However, the mean value of badminton player is greater than the tennis players of flexibility parameters.

And, there was found significant differences of speed between the badminton and tennis players as the calculated 't'=3.65 is greater than the tabulated 't'=2.048 at 0.05 level of confidence.

The graphical representation of mean comparison of flexibility and speed between the badminton and tennis players is shown in figure 1.

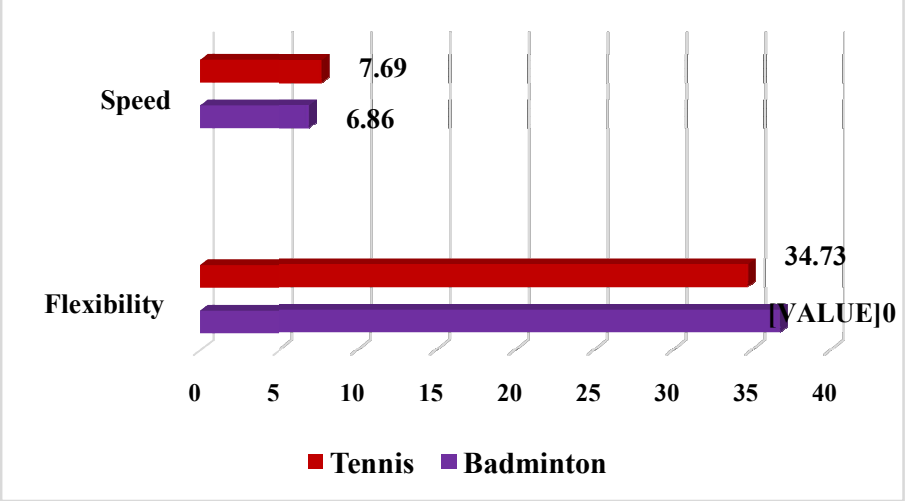

Figure 1: Mean Comparison of Flexibility and Speed Between the Badminton and Tennis Players.

7. Discussion of Finding

The finding of the present study shows that the results of independent 't' test was found insignificant difference of flexibility parameter between the badminton and tennis players. The results might be due to flexibility plays the most important role in enhance performance; it helps the muscle's qualities, strength and reduces the risk of injury. So, every player needs more emphasis on stretching and warm-ups for the flexibility of their muscles. In racket games, body flexibility helps with free body movement, stretching, bending the body spine, rotating the shoulder, wrist, and freely movement of footsteps. The ability of more flexibility racket players to transfer more energy into their powerful shots, smashers, accurate clears, and better control over the shuttlecock, enabling players to execute precise drop shots and net shots. According to Ajayi-Vincent & Adesina (2014) reported the non-significant difference in trunk flexibility and the relative high flexibility ratings could be influenced by the nature of the racket games which requires flexibility at the spine on stretching and bending forwards and backwards and may at times be in rotation movements from side to side.

However, the mean value of a badminton player is greater than that of a tennis player in terms of flexibility parameters. The results might be due to the fact that badminton is one of the fastest racket games; there is a need for fast and quick range of motion in body movement. In badminton, there are a lot of forward, backward, and side-to-side to cover all part of the court in fast movements compared to tennis. Therefore, badminton players have more flexibility than tennis players.

In the case of speed, there was a significant difference between badminton and tennis players. The results might be due to speed, which plays a vital role in any performance or skill in any game. Speed with strength give the force of any performance. However, in badminton, there are a lot of footsteps up, down, and side to side in a short period of time to cover the whole court. Therefore, badminton players have a higher speed ability than tennis players. Gill & Kumar (2014) reported the badminton female players having more speed than lawn-tennis female players.Running speed is important to the badminton players due to the need for speed variation, height and approach to the shuttle (Cinthuja et al.,2015).

8. Hypothesis Testing

By the result of the study, the hypothesis H_1 the research hypothesis was rejected and the null hypothesis was accepted. And, hypothesis H_2 the research hypothesis was accepted and the null hypothesis was rejected.

9. Conclusion

The result of the study showedinsignificant differences of flexibility between the badminton and tennis players. However, the mean value of badminton player is greater than the tennis players of flexibility parameters. And, there were significant differences of speed between the badminton and tennis players.

10. Recommendation

Badminton and Tennis coaches, physical education teachers, and players should understand the importance of specific determined the objective of the presents study to develop the importance of flexibility and speed fitness components to vital role of enhance the performance of badminton and tennis players. Similar research of may be conducted for other games and sports to investigate the physical fitness components of the players.

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