



ISSN: 2456-0057

IJPNPE 2023; 8(1): 08-10

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Received: 02-11-2022

Accepted: 09-12-2022

**Laishram Santosh Singh**

Department of Physical  
Education and Sports Science,  
Manipur University, Canchipur,  
Manipur, India

**Keisham Monarita**

Research Scholar, Department of  
Physical Education, Panjab  
University, Chandigarh, Punjab,  
India

**Konsam Puinachandra**

M.P.E.S., Manipur University,  
Canchipur, Manipur, India

**Khumukcham Shivananda Singh**

Research Scholar, Department of  
Physical Education, Panjab  
University, Chandigarh, Punjab,  
India

**Sapam Dijendra Singh**

M.P.E.S., Manipur University,  
Canchipur, Manipur, India

**Corresponding Author:**

**Laishram Santosh Singh**

Department of Physical  
Education and Sports Science,  
Manipur University, Canchipur,  
Manipur, India

## A comparative study on selected motor abilities between badminton and table tennis players

**Laishram Santosh Singh, Keisham Monarita, Konsam Puinachandra,  
Khumukcham Shivananda Singh and Sapam Dijendra Singh**

### Abstract

The purpose of the study was to find out the comparative analysis of Selected Motor Abilities (Muscular Strength, muscular Endurance and Speed) between Badminton and Table Tennis players. The study has been conducted on 10 male Badminton and 10 Table Tennis players. The subjects were selected from Manipur Badminton Association of Dhanamanjuri University and Manipur Table Tennis Association of Dhanamanjuri University, Manipur. The age of the subjects ranged between 18-20 years. The study was conducted on selected Motor Abilities (Muscular Strength, Muscular Endurance and Speed). The data was collected through 30 seconds Push Ups for Muscular Strength, 30 seconds Sit Ups for Muscular Endurance and 50 meters dash for Speed. To find out significant difference among the group independent 't'-test was used with the help of SPSS Software. The level significance chosen was 0.05. After the analysis, it was revealed that there was significant difference obtained on Speed between the two groups. Whereas, no significant differences were found on Muscular Strength and Muscular Endurance between Badminton and Table Tennis Players of Dhanamanjuri University, Manipur. Table Tennis Players had more speed as compare to the Badminton Players.

**Keywords:** Muscular strength, muscular endurance, speed, badminton players and table tennis players

### Introduction

Badminton is a racquet sport played using racquets to hit a shuttlecock across a net. Although it may be played with larger teams, the most common forms of the game are "singles" (with one player per side) and "doubles" (with two players per side). Badminton is often played as a casual outdoor activity in a yard or on a beach; formal games are played on a rectangular indoor court. Points are scored by striking the shuttlecock with the racquet and landing it within the opposing side's half of the court.

Each side may only strike the shuttlecock once before it passes over the net. Play ends once the shuttlecock has struck the floor or if a fault has been called by the umpire, service judge, or (in their absence) the opposing side. (Boga, 2008) [1].

Table tennis, also known as ping-pong and whiff-whaff, is a sport in which two or four players hit a lightweight ball, also known as the ping-pong ball, back and forth across a table using small solid rackets. It takes place on a hard table divided by a net. Except for the initial serve, the rules are generally as follows: Players must allow a ball played toward them to bounce once on their side of the table and must return it so that it bounces on the opposite side. A point is scored when a player fails to return the ball within the rules. Play is fast and demands quick reactions. Spinning the ball alters its trajectory and limits an opponent's options, giving the hitter a great advantage.

General motor ability has been considered as one's level of ability in wide range of activities. It has been thought of as an integrated composite of such individual traits as strength, endurance, power, speed, agility, balance, reaction time, and coordination traits underlying performance in many motor complexes. In successful motor performance, these traits function in a coordinated manner and in effective sequence to achieve an accurate and efficient movement whether it may be a single effort as in the golf drive or in a series of complexes and rapidly changing movements as in basketball (Clarke, 1976) [5].

Singh *et al.* 2017 [3] also conducted a study to compare selected motor fitness component levels among the Uttarakhand state level racket sports players. One hundred fifty (150) subjects, 50 badmintons, 50 table tennis and 50 squash players were selected from the Uttarakhand State for this study. The age of the selected subjects ranges from 16 to 19 years. Motors fitness tests were administered to find out the various motor fitness components (muscular power, strength and endurance) among the different racket sports. The result showed that Badminton players were comparatively better than table tennis and squash sports player in all the selected motor fitness components.

Thakur *et al.*, 2012 [4] compared physical fitness components namely explosive strength, speed, endurance, agility, flexibility between table tennis and badminton male players belonging to various institutes of Maharishi Markendeshwar University, Mullana. The study was carried out on 50 male players, 25 from table tennis and 25 from badminton. The data was collected by using the measurements of age, height, and weight as well as by application of tests like standing broad jump, 50 yards dash, 600 yard run/walk, shuttle run and sit ups. The results found significant difference in speed, and agility and no significant difference in strength, endurance and flexibility components between table tennis and badminton male players. Table Tennis Players had more speed and agility than Badminton Players.

**Objectives of the study**

1. To compare the Muscular Strength between Badminton and Table Tennis players.
2. To determine the Muscular Endurance between Badminton and Table Tennis players.
3. To compare the Speed between Badminton and Table Tennis players.

**Materials and Methods**

The study has been conducted on 10 male Badminton and 10 male Table Tennis Players. The subjects were selected from Manipur Badminton Association of Dhanamanjuri University and Manipur Table Tennis Association of Dhanamanjuri University, Manipur. The age of the subjects ranged between 18-20 years. The study was conducted on selected Motor Abilities (Muscular Strength, Muscular Endurance and Speed). The data was collected through 30 seconds Push Ups for Muscular Strength, 30 seconds Sit Ups for Muscular Endurance and 50 meters dash for Speed. For analysing the data, descriptive statistic for mean and standard deviation was used and to find out significant difference among the group independent ‘t’-test was used with the help of SPSS Software. The level of significance chosen was 0.05.

**Findings**

The comparison of Muscular Strength between Badminton players and Table Tennis players are depicted in table 1.

**Table 1:** Comparison of Scores on Muscular Strength (Push ups) Between Badminton Players and Table Tennis Players

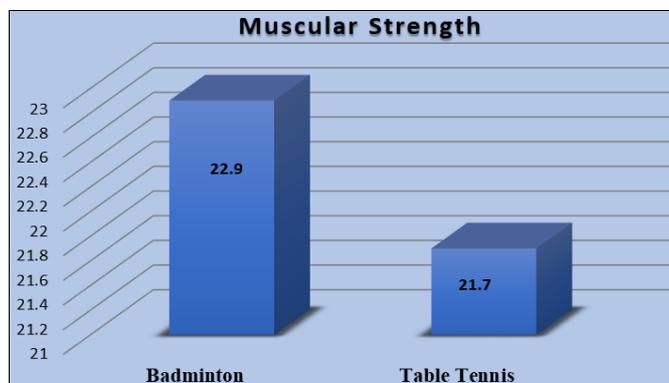
Variable	Group	N	Mean	SD	d. f.	t- value
Muscular Strength	Badminton	10	22.90	4.22	18	0.55
	Table Tennis	10	21.70	5.43		

\*Significance at.05 level ‘t’.05 (18) = 2.10

In the above of table 1, shows that the mean and standard deviation value with regard to Badminton players on the variable Muscular Strength were 22.90 and 4.22 whereas

Table Tennis players were 21.70 and 5.43 respectively. So, it indicates that no significant differences were found between Badminton and Table Tennis players as the calculated t-value (0.55) was less than tabulated t-value (2.10) on 18 degrees of freedom at.05 level of significant.

The graphical representation of mean comparison on Muscular strength between Badminton and Table Tennis players are depicted in fig. 1.



**Fig 1:** Mean Scores of Badminton Players and Table Tennis Players on Muscular Strength

The comparison Muscular Endurance between Badminton players and Table Tennis players are depicted in table 2.

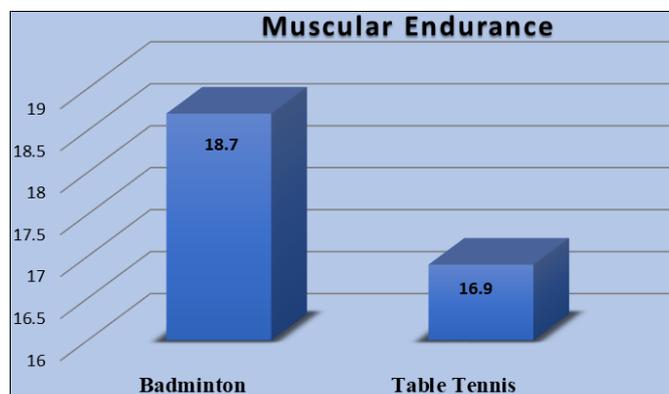
**Table 2:** Comparison of scores on muscular endurance (sit ups) between badminton players and table tennis players

Variable	Group	N	Mean	SD	d. f.	t- value
Muscular Endurance	Badminton	10	18.70	3.40	18	0.77
	Table Tennis	10	16.90	6.47		

\*Significance at.05 level ‘t’.05 (18) = 2.10

In the above of table 2, shows that the mean and standard deviation value with regard to Badminton players on the variable Muscular Strength were 18.70 and 3.40 whereas Table Tennis players score were 16.90 and 6.47 respectively. So, it indicates that no significant differences were found between Badminton and Table Tennis players as the calculated t-value (0.77) was lower than tabulated t-value (2.10) on 18 degrees of freedom at.05 level of significant.

The graphical representation of mean comparison on Muscular Endurance between Badminton and Table Tennis players are depicted in fig. 2.



**Fig 2:** Mean Scores of Badminton Players and Table Tennis Players on Muscular Endurance

The comparison of Muscular Strength between Badminton players and Table Tennis players are depicted in table 3.

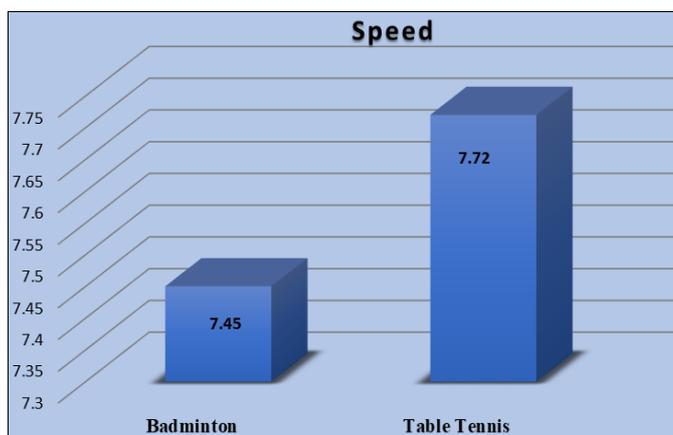
**Table 3:** Comparison of Scores on Speed (50 m Dash) Between Badminton Players and Table Tennis Players

Variable	Group	N	Mean	SD	d. f.	t- value
Speed	Badminton	10	7.45	0.23	18	2.35*
	Table Tennis	10	7.72	0.27		

\*Significance at.05 level ‘t’<sub>.05</sub> (18) = 2.10

In the above of table 3, shows that the mean and standard deviation value with regard to Badminton players on the variable Speed were 7.45 and 0.23 whereas Table Tennis players were 7.72 and 0.27 respectively. So, it indicates that significant differences were found between Badminton and Table Tennis players as the calculated t-value (2.35) was greater than tabulated t-value (2.10) on 18 degrees of freedom at.05 level of significant.

The graphical representation of mean comparison on Speed between Badminton and Table Tennis players are depicted in fig.3.



**Fig 3:** Mean scores of badminton players and table tennis players on speed

**Conclusions**

- No significant difference was found on muscular strength between between Badminton and Table Tennis players of Dhanamanjuri University, Manipur.
- No significant difference was found on muscular endurance between between Badminton and Table Tennis players of Dhanamanjuri University, Manipur.
- Significant difference was found on speed between between Badminton and Table Tennis players of Dhanamanjuri University, Manipur.
- Table Tennis players had performed significantly better on speed as compare to Badminton players.

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