



A COMPARATIVE STUDY OF RESTING PULSE RATE AND BREATH HOLDING TIME BETWEEN COLLEGE BADMINTON AND BALL BADMINTON PLAYERS

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Cite This Article: Dr. R. Thanalakshmi, "A Comparative Study of Resting Pulse Rate and Breath Holding Time Between College Badminton And Ball Badminton Players", Indo American Journal of Multidisciplinary Research and Review, International Peer Reviewed - Refereed Research Journal, Volume 8, Issue 1, January - June, Page Number 82-84, 2024.

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Abstract:

The purpose of the study was to compare the resting pulse rate and breath holding time between college men badminton and ball badminton players. To achieve this purpose of the study, sixty college men students from Dr. Sivanthi Aditanar College of Physical Education, Tiruchendur, Tamilnadu, India were selected as subjects at random. The selected subjects were divided into two equal groups of thirty badminton players and thirty ball badminton players. Among the physical fitness components, the following variables namely resting pulse rate and breath holding time were selected as criterion variables. All the subjects of two groups were tested on selected dependent variables namely resting pulse rate and breath holding time by using radial pulse and holding the breath for time respectively. The independent 't' ratio was used to analyze the significant difference, if any between groups. The .05 level of confidence was fixed as the level of significance to test the 't' ratio obtained, which was considered as an appropriate. The results of the showed that there was a significant difference between badminton players and ball badminton players on resting pulse rate and breath holding time.

Key Words: Resting Pulse Rate, Breath Holding Time, College Men Badminton, Ball Badminton Players

Introduction:

Physical fitness is a cornerstone of athletic performance, with various parameters serving as indicators of an athlete's cardiovascular health and endurance. Among these parameters, resting pulse rate and breath-holding time are particularly crucial, reflecting the efficiency of the cardiovascular system and respiratory capacity. Understanding these factors in different athletic populations provides valuable insights into the physiological adaptations associated with specific sports and training regimens. Therefore, this study aims to conduct a comparative analysis of resting pulse rate and breath-holding time between college-level players of two popular racket sports: badminton and ball badminton.

Badminton and ball badminton are both dynamic racket sports that demand significant cardiovascular and respiratory capabilities from players. While badminton is widely recognized and played internationally, ball badminton, originating in India, boasts a dedicated following in various regions. Despite their similarities in equipment and gameplay, subtle differences exist in the intensity, duration, and movement patterns inherent to each sport. These distinctions may influence the physiological adaptations observed in athletes, particularly regarding cardiovascular and respiratory parameters.

Resting pulse rate, the number of heartbeats per minute in a state of complete rest, serves as a fundamental indicator of cardiovascular health and fitness. A lower resting pulse rate typically correlates with a more efficient heart function and greater cardiovascular endurance. Similarly, breath-holding time, the duration an individual can comfortably hold their breath, reflects respiratory efficiency and lung capacity. Athletes with higher breath-holding times often demonstrate superior respiratory control and endurance, essential for sustaining intense physical exertion during gameplay.

While previous studies have explored the physiological characteristics of athletes in various sports disciplines, limited research directly compares the resting pulse rate and breath-holding time of badminton and ball badminton players. By conducting such a comparative analysis, this study endeavors to elucidate potential differences in cardiovascular and respiratory adaptations between these two athlete populations. Understanding these differences can inform training strategies tailored to the specific demands of each sport, ultimately optimizing athletic performance and overall health outcomes.

In addition to enhancing our understanding of the physiological profiles of badminton and ball badminton players, this comparative study holds practical implications for coaches, trainers, and sports scientists involved in athlete development and performance optimization. By identifying distinct physiological characteristics inherent to each sport, practitioners can tailor training protocols and conditioning programs to address the unique needs of players, thereby maximizing their potential for success on the court and promoting long-term health and well-being.

Methodology:

The purpose of the study was to compare the resting pulse rate and breath holding time between college men badminton and ball badminton players. To achieve this purpose of the study, sixty college

men students from Dr. Sivanthi Aditanar College of Physical Education, Tiruchendur, Tamilnadu, India were selected as subjects at random. The selected subjects were divided into two equal groups of thirty badminton players and thirty ball badminton players. Among the physical fitness components, the following variables namely resting pulse rate and breath holding time were selected as criterion variables. All the subjects of two groups were tested on selected dependent variables namely resting pulse rate and breath holding time by using radial pulse and holding the breath for time respectively. The independent 't' ratio was used to analyze the significant difference, if any between groups. The .05 level of confidence was fixed as the level of significance to test the 't' ratio obtained, which was considered as an appropriate.

Analysis of the Data:

Resting Pulse Rate:

The mean, standard deviation and 't' ratio values on resting pulse rate of badminton players and ball badminton players have been analyzed and presented in Table I.

Table 1: The Mean, Standard Deviation and 't' Ratio Values Between Badminton and Ball Badminton Players on Resting Pulse Rate

Groups	Mean	Standard Deviation	't' Ratio Value
Badminton Players	70.28	0.10	61.78*
Ball badminton Players	72.13	0.13	

* Significant at .05 level of confidence.

(The table values required for significance at .05 level of confidence with df 58 was 2.002).

The table 1 shows that the mean values on resting pulse rate for badminton players and ball badminton players were 70.28 and 72.13 respectively. The obtained 't' ratio value on resting pulse rate 61.78 which was greater than the table value required for significance with df 58 was 2.002.

The results of the study showed that there was a significant difference between college men badminton players and ball badminton players on resting pulse rate.

Breath Holding Time:

The mean, standard deviation and 't' ratio values on breath holding time of badminton players and ball badminton players have been analyzed and presented in Table II.

Table 2: The Mean, Standard Deviation and 't' Ratio Values Between Badminton and Ball Badminton Players on Breath Holding Time

Groups	Mean	Standard Deviation	't' Ratio Value
Badminton Players	44.59	1.10	8.89*
Ball badminton Players	42.10	1.07	

* Significant at .05 level of confidence.

(The table values required for significance at .05 level of confidence with df 58 was 2.002).

The table 2 shows that the mean values on breath holding time for badminton players and ball badminton players were 44.59 and 42.10 respectively. The obtained 't' ratio value on breath holding time 8.89 which was greater than the table value required for significance with df 58 was 2.002.

The results of the study showed that there was a significant difference between college men badminton players and ball badminton players on breath holding time.

Conclusions:

- There was a significant difference between badminton players and ball badminton players on resting pulse rate.
- There was a significant difference between badminton players and ball badminton players on breath holding time.

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