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**Praveen Kumar Mishra**

HOD of Physical Education

Swaminarayan Vidyapith,

Anand, Gujarat, India

## A comparative study physiological variables and physical fitness variables between of national basketball and handball female players

**Praveen Kumar Mishra**

### Abstract

To compare the Physiological Variables and Physical Fitness variables between the National level Basketball and Handball Female Players. To achieve the purpose of this study 30 Basketball and Handball Female players i.e. Basketball (n=15) & Handball (n=15), who participated in the inter college completion organized by Sardar Patel University, Anand, Gujarat, India were randomly selected and used as subjects in this study. Age group ranged from 18-25years. The study was taken to pinpoint the Physiological Variables and Physical Fitness variables. Therefore, based on literary evidence and scholar's own understanding the following variables were selected for the purpose of this study: 1) Resting Heart Rate, 2) Resting Respiratory Rate, 3) Strength & 4) Endurance. To test the significance of mean difference between the Basketball and Handball players, statistical technique of 't' test was applied. Mean 1.68 and SD 3.85 of Resting Heart Rate of Basketball and Handball female players were respectively 1.67 and 3.00 and the calculated t value 0.63. The Mean and SD of Resting Respiratory Rate of Basketball and Handball female players were respectively 65.11 & 3.62 and 65.77 & 2.57 and the calculated t value 0.57. Strength of the Mean & SD of basketball female players 7.03 & 0.06 and handball were 6.99 & 0.07, Mean difference 0.03, standard error 0.02 and the calculated t value 1.34; The Mean & SD of Endurance of basketball players and handball female players were respectively 14.01 & 0.07 and 14.07 & 0.24 and the calculated t value 0.90. Table the t value shows that in Physiological Variables namely Resting Heart Rate, Resting Respiratory Rate there is no significant difference between basketball and handball female players. When compared to the mean values of both the groups, finally it has been found that basketball players have considerably average than handball female players in Resting Heart Rate, Resting Respiratory Rate, Strength and Endurance.

**Keywords:** Physiological variables, physical fitness variables, female players

### 1. Introduction

There is more understanding of the physiological need for acclimatization. There is better medical control over chances of infections, above all, there is greater attention paid to the development of the psychological attitude necessary to successful competition. But mostly the improvements are due to the athletes themselves in sprints, jumps and the throwing events. Alternatively, it is hard to resist the conclusion that the modern athlete is actually better endowed physically, better suited to his particular task. In events such as the Shot Put, there has been advance most in technique too. Clearly the research for betterment has been successful.

Physical fitness is one of the most important aspects in the field of physical education. But physical fitness is not the same with health; it plays an essential role in all aspects of health because they are very much related. Good health provides a solid foundation on which fitness rests and at the same time fitness provides one of the important keys to health and living one's Life to the fullest. Fitness is not a state for the young; it is reality for all ages. Fitness is a product of exercise and training has been shown through research to possess important implication in the general health of people. Proper nutrition, adequate rest relaxation, health appraisal and good habits are all factors of implementation. The physical fitness is a concept which has both an absolute and a relative meaning. In absolute term the man can run faster, jump high, lift and handle the heaviest burdens and attain the highest output during a working

**Correspondence**

**Praveen Kumar Mishra**

HOD of Physical Education

Swaminarayan Vidyapith,

Anand, Gujarat, India

day, must be most fit the person for the particular activity. On the other hand when considered fitness in a relative term, a person of small size may not be able to complete in weight lifting with a bigger man and his maximum work out put may be much less. But still he may be physiologically most fit. Various researchers suggested that different body size, shape and proportions are beneficial in different physical activities (Kansal *et al.*, 1986) [3]

**2. Methodology**

**2.1 Objective of the study**

To Compare the Physiological Variables and Physical Fitness variables between the National level Basketball and Handball Female Players

**2.2 Hypothesis**

It was hypothesized that there would be significant differences between Physiological Variables and Physical Fitness variables between of National Basketball and Handball Female Players.

**2.3 Subjects**

To achieve the purpose of this study 30 Basketball and Handball Female players i.e. Basketball (n=15) & Handball (n=15), who participated in the inter college completion

organized by Sardar Patel University, Anand, Gujarat, Inida were randomly selected and used as subjects in this study. Age group ranged from 18-25years.

**2.4 Variables**

The study was taken to pinpoint the Physiological Variables and Physical Fitness variables. Therefore, based on literary evidence and scholar's own understanding the following variables were selected for the purpose of this study:

1. Resting Heart Rate
2. Resting Respiratory Rate
3. Strength.
4. Endurance

**2.5 Statistical Technique**

To test the significance of mean difference between the Basketball and Handball players, statistical technique of 't' test was applied.

**3. Results and Discussion**

Since the purpose of the study was to analyze the selected Physiological Variables and Physical Fitness variables of players of Basketball and Handball, these are explained with the help of different tables.

**Table 1:** Means, S.Ds. & T-Values of selected Physiological Variables and Physical Fitness variables of Players of Basketball and Handball

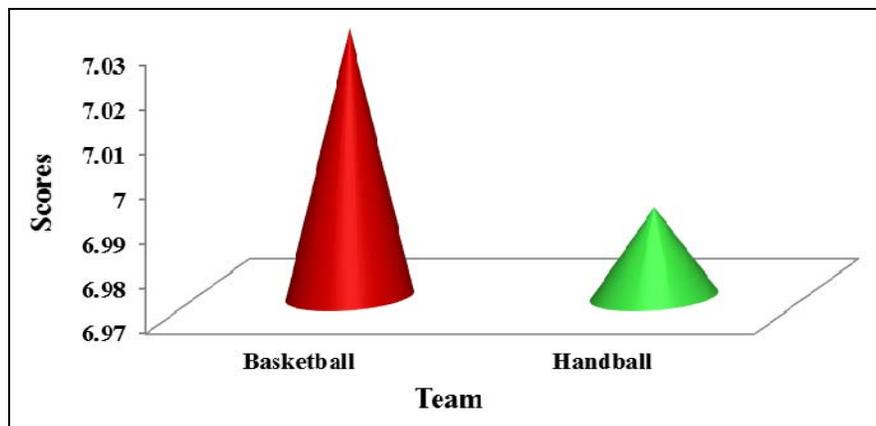
| S. No. | Dimensions               | Basketball |       | Handball |       | T -Values |
|--------|--------------------------|------------|-------|----------|-------|-----------|
|        |                          | Mean       | S. D. | Mean     | S. D. |           |
| 1.     | Resting Heart Rate       | 1.68       | 3.85  | 1.67     | 3.00  | 0.63      |
| 2.     | Resting Respiratory Rate | 65.11      | 3.62  | 65.77    | 2.57  | 0.57      |
| 3.     | Strength                 | 7.03       | 0.06  | 6.99     | 0.07  | 1.34      |
| 4.     | Endurance                | 14.01      | 0.07  | 14.07    | 0.24  | 0.90      |

\* Significance at 0.05 level of confidence.

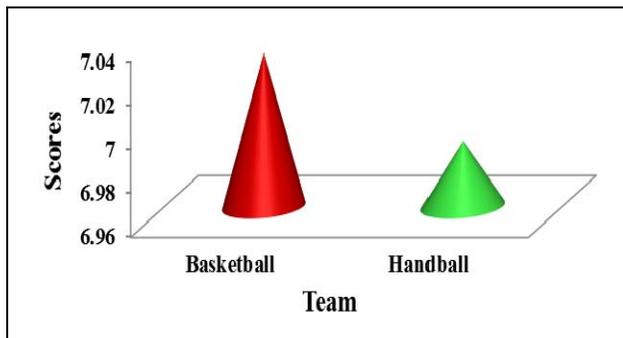
From the above Table show Mean 1.68 and SD 3.85 of Resting Heart Rate of Basketball and Handball female players were respectively 1.67 and 3.00 and the calculated t value 0.63. The Mean and SD of Resting Respiratory Rate of Basketball and Handball female players were respectively 65.11 & 3.62 and 65.77 & 2.57 and the calculated t value 0.57. Strength of the Mean & SD of basketball female players 7.03 & .06 and handball were 6.99 & 0.07, Mean difference 0.03, standard error 0.02 and the calculated t value 1.34; The Mean & SD of Endurance of basketball players and handball

female players were respectively 14.01& 0.07 and 14.07 & 0.24 and the calculated t value 0.90.

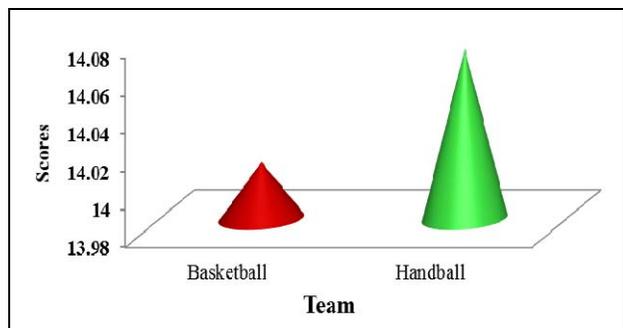
In the above table the t value shows that in Physiological Variables namely Resting Heart Rate, Resting Respiratory Rate there is no significant difference between basketball and handball female players. When compared to the mean values of both the groups, finally it has been found that basketball players have considerably average than handball female players in Resting Heart Rate, Resting Respiratory Rate, Strength and Endurance.



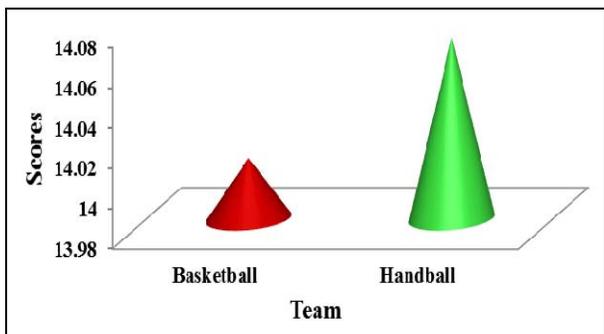
**Fig 1:** Comparison of Mean Score of Resting Heart Rate between Basketball and Handball Players



**Fig 2:** Comparison of Mean Score of Resting Respiratory Rate between Basketball and Handball Players



**Fig 3:** Comparison of Mean Score of Strength between Basketball and Handball Players



**Fig 4:** Comparison of Mean Score of Endurance between Basketball and Handball Players

**4. Conclusion**

It is concluded from the result that no significant difference was observed between basketball and handball female players. The following Recommendations are made on the basis of the results from the study which may be useful for the future research work. The study may be repeated to other anthropometric and Physical fitness variables on the same subjects. The same study may be repeated on the other class of the society for different age groups of subjects.

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