



**A COMPARATIVE STUDY ON SELECTED FITNESS
VARIABLES OF TRIBAL HANDBALL AND
VOLLEYBALL PLAYERS**

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ABSTRACT

Sports by their very nature are enjoyable, challenging, all absorbing and require a certain amount of skill and physical condition in order of human values. Ball games are one of the most popular of all the common games and sports. Handball is very fast by its nature and demands a high level of specific fitness. It is a game of constant actions and requires continuous adaptations to the changing situation by the team as well as by individual players. Volleyball has a requirement for a great deal of planned program to highly trained teams. The purpose of the study was to compare the selected fitness variables between tribal Handball and Volleyball players of Bankura district. Forty (40) male student players of Gobinda Prasad Mahavidyalaya and Ramananda College (20 Handball and 20 volleyball players) were selected as subjects. The average age of the subject was 19.2 years. The performance variables such as speed, strength, agility and cardiorespiratory endurance were measured with a standard test. Product moment correlation was used to establish reliability. t-test was used in order to find out the significant differences between the selected variables of Handball and Volleyball players. The significant differences were observed at 0.05 level in speed, leg explosive strength, agility and cardiorespiratory endurance. No significant difference was seen in Arm and shoulder strength.

Keywords: Speed, Strength, Agility, Cardio respiratory, Variables.

1. INTRODUCTION

Sports by their very nature are enjoyable, challenging, all absorbing and require a certain amount of skill and physical condition in order of human values. Conquest in the field of sports hold a unique place. Out of many important prerequisites' factors for top performance, physical fitness and different forms of activity has been regarded as very important factors of the fundamental patterns of living and performance for every creature that has ever lived on earth. For this reason, the condition of a person's body must have always been of great concern. Skill plays an important role in the performance of an individual. **Singer (1975)** explain that motor talent could be a muscular movement or motion of the body needed for the prosperous execution of a desired act.

Handball games is very fast by its nature and demands a high level of specific fitness. It is game of constant actions and requires continuous adaptations to the changing situation by the team as well as by individual players. Volleyball also requires a great deal of planned deception on the part of the two highly trained teams. Thus, Volleyball players require a wide range of physical and physiological characteristics and abilities along with a broad-based specific training for successful performance. The physical abilities that are required for volleyball players to perform optimally are; muscular power, strength and speed of movements, flexibility and agility. To satisfy the demands of the volleyball skills, the fast motor units will be recruited and energy will be produced through anaerobic metabolism (**Fox and Mathews, 1974**).

Singh (2019) in a study have clearly indicated that handball players found better in the components such as speed, cardiovascular endurance, muscular strength, whereas basketball players found better in agility. **Pooja et.al (2018)** in their study concluded that no significant difference in leg explosive power and shoulder strength between handball and volleyball players but handball players were better in both variables. In another study **Singh (2017)** found significant difference in the circulatory, respiratory endurance and abdominal muscular endurance of handball and volleyball players and there was no significant difference were found in agility and leg explosive power, arm/shoulder muscular endurance and speed between handball and volleyball male players. **Kumar (2017)** have found no significant differences for the variables of sit ups and 600-meter run but found significant differences between pull ups, shuttle run and 50-meter run. **Dhanasekaran et.al (2016)** in their study found no difference in speed, agility, and arm strength among the volleyball, handball and basketball players but in explosive power the volleyball players obtained the highest value when compared to basketball and handball players.

Ibrahim and Azeem (2010) discovered that good speed and agility may improved the defensive ability among handball players. In the same way, good explosive power, cardio-respiratory endurance and flexibility can improved the passing ability. The dribbling ability can be developed through good speed and agility. **Manmeet et al, (2010)** concluded that the university level female students from rural area found stronger in strength, endurance, agility and speed their counter urban students. University level female students found stronger and more in flexibility and their weight than their counter part rural students. **Singh (2015)** revealed that statistically significant differences were found between handball and volleyball players of inter-university level on flexibility, explosive strength & endurance, agility components. He suggested that same study can be replicated on large sample of national level male and female players of both sports.

There are a lot of differences between tribal and non-tribal in every aspect of life i.e., customs, rituals of living etc. Therefore, it is possible that there may be greater difference in

body composition, haemoglobin content, blood pressure etc. Between tribal and non-tribal boys. There is a popular belief among the common people of India that tribal and non-tribal differ in their speed, strength, endurance, agility and they should be provided with separate physical activities. Apart from the difference between tribal and non-tribal folk there may be differences with respect to games also.

2. METHODOLOGY

2.1 Selection of Subjects

For this study 40 male college level tribal players (20 Handball and twenty Volleyball players) of Bankura district in Bengal were selected as the subject. The average age of the subject was 19.2 years ranging from 18 -21 years.

2.2 Selection of Variables

On the basis of experts' opinion and available literature considering the feasibility of equipment the following variables were selected-

- (A) Personal variables: Age, height, weight and BMI
- (B) Performance variables
 1. Speed,
 2. Arm and Shoulder strength,
 3. Leg explosive strength,
 4. Agility and
 5. Cardio respiratory endurance.

2.3 Procedure

The data pertaining to the speed, arm and shoulder strength, leg explosive strength, agility and Cardio-respiratory endurance collected by administering the specific tests and measurement procedures. Data were collected on two groups of 20 handball and 20 Volleyball players of two different colleges. Before administering the test, the purpose of the study was explained to the subjects and the investigator solicited their corporation which all of them readily agreed to extend.

3. RESULTS AND DISCUSSION

To find out the significant differences between handball and volleyball players, in performance variables i.e. Speed, Arm and Shoulder strength, Leg explosive strength, Agility and Cardio respiratory endurance, mean, SD and t-ratio (Verma, 2000) were computed and data are presented in Table 1 & 2.

TABLE 1
DESCRIPTIVE STATISTICS OF PERFORMANCE VARIABLES OF HANDBALL AND VOLLEYBALL PLAYERS

Performance Variables	Mean ± SD	
	Handball Players	Volleyball Players
Speed	6.74 ± 0.31	7.08 ± 0.29
Arm and Shoulder Strength	6.35 ± 1.76	6.40 ± 1.71
Leg Explosive strength	2.23 ± 0.28	1.98 ± 0.18
Cardio respiratory Endurance	2.38 ± 0.25	2.84 ± 0.26
Agility	11.46 ± 0.36	11.83 ± 0.58

From the Table 1, it was observed that the mean and SD value of Speed, Arm and Shoulder strength, Leg explosive strength, Agility and cardiorespiratory endurance of Handball and Volleyball player are 6.74± 0.309, 7.08 ± 0.29, 6.35 ± 1.76, 6.4 ± 1.71, 2.23 ± 0.284, 1.98 ±

0.184, 11.46 ± 0.360 , 11.83 ± 0.579 , 2.38 ± 0.25 and 2.84 ± 0.26 respectively. The mean scores of all the performance variables has been depicted in Figure 1.

FIGURE 1

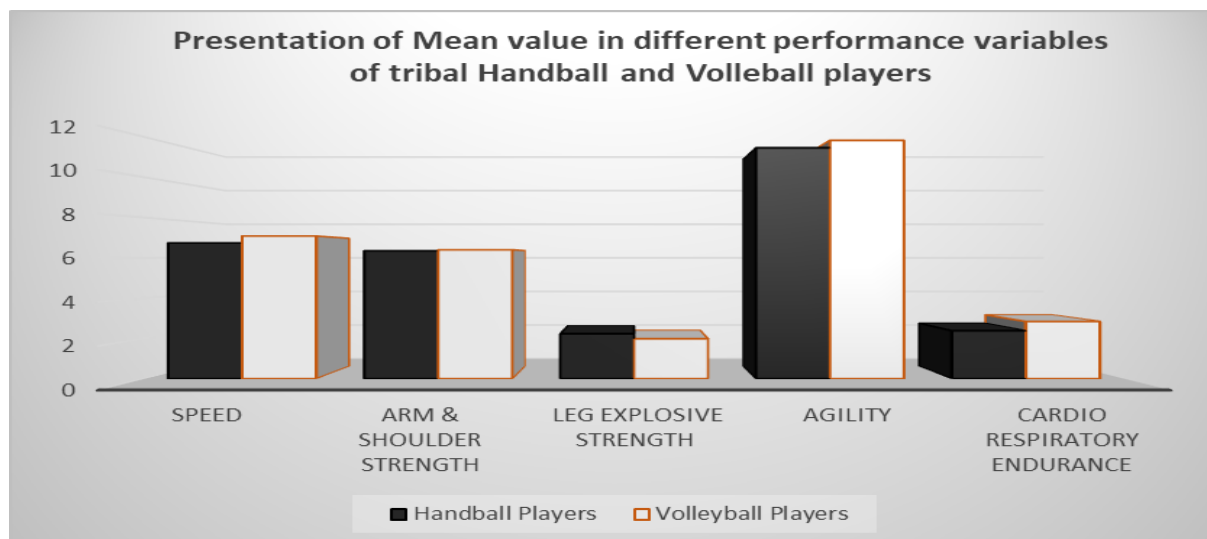


TABLE 2
SIGNIFICANCE OF DIFFERENCES OF MEAN IN DIFFERENT PERFORMANCE VARIABLES OF TRIBAL HANDBALL AND VOLLEYBALL PLAYERS

Variables	N	Mean	MD	σ DM	t- ratio
Speed	40	6.74 7.08	0.34	0.09	3.45*
Arm and Shoulder strength	40	6.35 6.40	0.05	0.06	0.88
Leg explosive Strength	40	2.23 1.98	0.25	0.08	3.33*
Agility	40	11.46 11.83	0.37	0.16	2.32*
Cardio-respiratory endurance	40	2.38 2.84	0.46	0.08	5.61*

*Significant at 0.05 level

$t_{.05 (38)} = 2.02$

From the Table 2 it was observed that the significant differences were found on speed, leg explosive strength, agility and cardio-respiratory endurance between tribal Handball and Volleyball players at 0.05 level. On the other hand, there was no significant difference on Arm and Shoulder strength between tribal Handball and Volleyball players.

4. DISCUSSION

The results of descriptive analysis clearly indicated that the speed, explosive strength of leg, cardio-respiratory endurance and agility performance variables of college level tribal handball players perceived greater amount in mean values than the college level tribal

Volleyball player. In case of mean scores on arm and shoulder strength, a little bit difference between college level tribal Handball and Volleyball players

To find out the significance of differences between college level handball and volleyball players of tribal region, t-ratio resulted dissimilarity in selected performance variables i.e. Speed, leg explosive strength, agility and cardio-respiratory endurance between college level handball and volleyball players belong to tribal region. But they had similarity on arm and shoulder strength.

5. CONCLUSIONS

From the obtained results and within the limitation of the study the following conclusions were drawn -

1. In case of speed the mean value of college level tribal handball players is found to be better than the college level tribal Volleyball player.
2. In case of Arm and Shoulder strength, the mean value is found to be almost equal of college level tribal Handball and Volleyball players
3. In case of Leg explosive strength, the mean value of college level tribal Handball players is found to be better than the college level tribal Volleyball players.
4. In case of Agility, the mean value of college level tribal Handball player is found to be better than the college level tribal Volleyball players.
5. In case of cardio-respiratory endurance, the mean value of college level tribal handball players is found to be better than the college level travel Volleyball players.

REFERENCES

- Dhanasekaran, L., and Mohankrishnan, R. (2016).** Comparative study of selected physical fitness components among basketball, handball and volleyball players.' International journal of recent research and applied studies. 60-63.
- Fox Edward L., and Mathews, Donald K. (1974).** Interval training; conditioning for sports and general fitness (First edition). Sunders publication.
- Gill, Manmeet Singh, Nishan and Kaur (2010).** A comparative study of physical fitness components of rural and urban female students of Punjab University, patiala. 12 (1), 17-21.
- Ibrahim S. and Azeem K, (2010).** Study on the relationship between skill performance and selected physical fitness variables of handball players. British journal of Sports Medicine, 44 (14), 96-98.
- Kumar, Vikash (2017).** A Comparative study of Physical Fitness variables of male volleyball and handball players. International Journal of Physiology, Nutrition and Physical Education. 3(1), 248-250.
- Pooja, M., & Nagraja, Y. (2018).** A Proportional study on shoulder strength and leg strength of Kuvempu University Feminine volleyball and handball players of inter collegiate level. International journal of science and research, 7 (3), 1403-1404.
- Singh, Bhubneshwar (2019).** Comparative study of selected physical fitness components between handball and basketball players. International journal of Physical Education, Sports & health, 6(2), 96-98.
- Singh, S. (2017).** A Comparative study of Physical fitness of handball and volleyball players at the inter collegiate level of Nagpur University. International journal of research in social sciences and information studies, 5, 318-320.

Singh, H. (2015). Comparative study on selected Physical fitness and Physiological variables between volleyball and handball players. *European journal of Physical education and sport*, 10, 206-211.

Singer, R. (1975). *Motor learning and human performance* (Second edition). USA: MacMillan Publishing Co., Inc.

Verma J. Parkash. (2000). *A text book of sports statistics*. Venus publication.