



# THE STRENGTH AND POWER OF KABADDI AND ATHLETICS PLAYERS

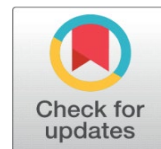


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## ABSTRACT

The purpose of this study was to compare shoulder strength and leg power between Kabaddi and Athletics players. The male subjects for the study were chosen by the present researchers. The participants in the study were those who competed in inter-college district tournaments. The participants were between the ages of 18-25 years. Twenty players from each of the games Athletics (n=20) and Kabaddi (n=20) were chosen by the researchers. A simple random sampling method was used to select the 40 subjects. The researchers used the Standing Broad Jump to collect data on leg power, which was measured in meters. Pull-ups were used to test shoulder strength, and the total number of pull-ups was counted. The statistical package SPSS was used to compare shoulder strength and leg power of Kabaddi and Athletics players and used the mean, standard deviation, and independent t-test. The level of significance was set at 0.05 to test the hypothesis. The findings show that the strength of the shoulders did not differ significantly between Kabaddi and Athletics players. Also, no significant difference was found in leg power between Kabaddi and Athletics players.

**Keywords:** Shoulder Strength, Leg Power, Kabaddi, Athletics

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## 1. INTRODUCTION

The term "physical fitness" is probably the most well-known and commonly used in the field of physical education. Physical fitness development is the most important objective of physical education Charjan (2016). Physical fitness is a must for any sport. Speed, strength, explosive power, endurance, and flexibility are all important motor qualities in sports. Players' physical fitness and motor qualities are heavily emphasized by sports a trainer, which is also a conditioning program Kansal (1996). Physical fitness can be split into two categories based on its multi-faceted characteristics: fitness in the body which is related to health and other is related to skills Douglas and Alan (1994). Speed, strength, endurance, flexibility, agility, cardiovascular fitness, and coordination ability are the main components of physical fitness Devi and Kumari (2016), Shaw and Andrabi (2021). Because of the sudden increase in participation and performance density in sports, which person who has the ability will have a chance to win an award in an international competition Singh (1991). Physical fitness and a healthy mind are unavoidable parts of human life. When Swami Vivekananda said,



"Physical fitness is very important," he was emphasizing the importance of physical fitness "My advice to you, you'll be closer to heaven by playing football than by studying the Bhagavad-Gita" [Prabhu and Sudhakara \(2019\)](#). The importance of physical fitness is emphasized because it is a crucial component of performance [Hamilton \(1993\)](#). Sports have become an important part of our human and social lives today. Sports are generally demanding because they necessitate a great deal of muscle and joint strength through high-level dynamic tasks [Rochcongar \(2004\)](#). For both offensive and defensive players, strength is crucial. The functional hamstring to quadriceps strength ratio (H: Q) can influence how well these activities are performed [Islam and De \(2018\)](#). To avoid injuries, offensive and defensive players should have more strength [Alkner et al. \(2003\)](#). To execute offensive pushes, falls, turns, sudden changes of direction holding, bending, jumping, leg and hand touch, and maintaining hold and respiration (Velu & Subramani, 2016). Kabaddi players require a high level of physical fitness. Both attackers and defenders must have tremendous physical stamina, agility, individual proficiency, neuromuscular coordination, quick reflexes, intelligence, mental toughness, and presence of mind to play Kabaddi [Nataraj and Chandrakumar \(2008\)](#). In terms of the most important physical fitness components in track and field athletics, sprinters need explosive power, anaerobic endurance, and agility [Bong-ju and Byoung-goo \(2017\)](#). Throwers require more strength, power, and coordination than most other athletes. Muscle strength, power, flexibility, and coordination are all requirements for jumpers [Korea Institute of Sport Science \(1998\)](#). Shoulder and leg strength is physical fitness factors that describe the ability of shoulder muscles to overcome maximum resistance. In a variety of sports and athletic events, lower leg power is essential [Singh \(2018\)](#), [Andrabi et al. \(2019\)](#). Athletic throwing (shot put, discus, hammer, and javelin) is a sport in which physical factors play a significant role in athletic performance [Takanashi et al. \(2020\)](#).

So, the authors want to compare the shoulder strength and leg power of Kabaddi and Athletics players.

### 1.1. AIM OF THE STUDY

The study aimed to compare shoulder strength and leg power in Kabaddi and Athletics players.

### 1.2. SELECTION OF SAMPLES

The 40 subjects included inter-college district-level men's Kabaddi and Athletics players from the Abhedananda Mahavidyalaya, Sainthia, West Bengal, India. The participants were between the ages of 18-25. shoulder strength and leg power were used as variables in this study. The inter-college district competition included all of the participants. Finally, data were collected from Abhedananda Mahavidyalaya, Sainthia, West Bengal, India.

**Table 1 The characteristics of the participants (Mean  $\pm$  SD)**

| Items                    | Athletics Players(n=20) | Kabaddi players(n=20) |
|--------------------------|-------------------------|-----------------------|
| Age (yr)                 | 19.1 $\pm$ 1.37         | 20.8 $\pm$ 1.40       |
| Weight (kg)              | 56.35 $\pm$ 7.67        | 59.5 $\pm$ 6.64       |
| Height (m)               | 1.7 $\pm$ 0.07          | 1.68 $\pm$ 0.05       |
| BMI (kg/m <sup>2</sup> ) | 19.58 $\pm$ 2.2         | 21.1 $\pm$ 2.55       |

### **1.3. SELECTION OF VARIABLES**

The variables listed below were chosen with the study's purpose

- Shoulder strength
- Leg power

### **1.4. CRITERION MEASURES**

In this study, the following criterion measures were used:

The "Pull-Ups" was used to test shoulder strength, and the result was recorded in counts.

The "Standing Broad Jump" was used to assess leg power, and the result was measured in Meters.

## **2. PROCEDURE FOR COLLECTING DATA**

### **2.1. SHOULDER STRENGTH**

With his body fully extended, the student takes a straight arm hanging position (hands directly above shoulders) on the horizontal bar. He raises his body with the forward grip (palm forward) until he can place his chin over the bar without kicking or swinging. He then returns to his original position by lowering his body. He goes over the procedure as many times as he can.

### **2.2. SCORING**

The total number of pull-ups correctly performed in a row determines the score.

### **2.3. LEG POWER**

His feet should be a comfortable distance apart, and his toes should be just behind the take-off mark. He crouches, leans forward, swings his arms backward, and then jumps horizontally as far as he can, landing on both feet.

### **2.4. SCORING**

Three jumps are compared and the best of them is measured to the Meter. The distance between the back of the Take-off mark and the nearest point where the student touches the floor at the end of the jump is measured.

### **2.5. STATISTICAL PROCEDURES**

The data for the investigation was gathered, and descriptive statistics and the 't-test were used to interpret and statistically analyze the data. The significance level for testing the hypothesis was 0.05.

### **2.6. FINDINGS**

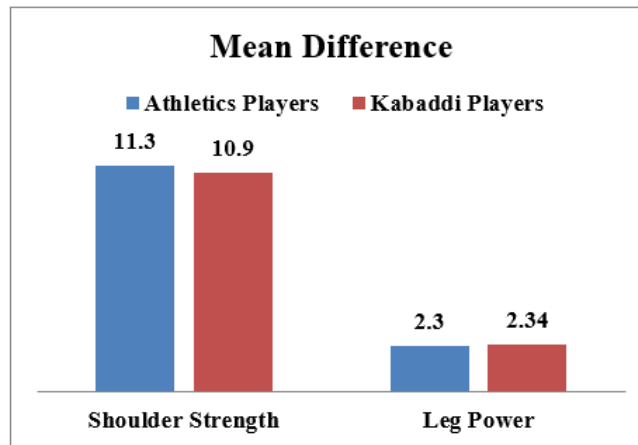
The researcher presented the calculated mean, SD, and independent t-test results of all variables of inter-college district-level Kabaddi and Athletics players in this area.

**Table 2 Unpaired t-test of Variables between Athletics players and Kabaddi players**

| Variables         | Athletics Players |      | Kabaddi Players |      | Inferential: Unpaired Sample t-test |    |                 |
|-------------------|-------------------|------|-----------------|------|-------------------------------------|----|-----------------|
|                   | Mean              | SD   | Mean            | SD   | t                                   | df | Sig. (2-tailed) |
| Shoulder Strength | 11.3              | 1.22 | 10.9            | 1.62 | 0.88                                | 38 | 0.383           |
| Leg Power         | 2.3               | 0.18 | 2.34            | 0.17 | -0.83                               | 38 | 0.411           |

Significance level at 38 df at 0.05 level = 2.024

Shoulder Strength is almost identical between the means of Kabaddi and Athletics players, as shown in Table 2. The mean of Athletics players is 11.3 and the mean of Kabaddi players is 10.9, where Athletics mean is slightly higher than the mean of Kabaddi players. As a result, the mean difference is 0.4. Before using the 't'-test the standard deviations for Athletics and Kabaddi players are 1.22 and 1.62 respectively. The calculated value of 't' is 0.88, which is lower than the tabulated 't' of 2.024 at the 0.05 significance level. Table 2 also shows that Leg Power is almost similar between the means of Athletics and Kabaddi players because the mean of Athletics players is 2.3 and the mean of Kabaddi players is 2.34, where the mean of Kabaddi is slightly higher than the mean of Athletics players and the mean difference is 0.04. Standard deviations for Athletics and Kabaddi players are 0.18 and 0.17 respectively. The calculated value of the 't'-test is -0.83, which is lower than the tabulated 't' of 2.024 at the 0.05 significance level.

**Figure 1** The mean difference between kabaddi and athletics players

### 3. DISCUSSIONS

This research can help with Variables understanding as well as individual differences in these Variables. This study, on the other hand, will provide data on the characteristics of kabaddi and athletics players.

Conducted a study of the sprinters who participated in the 100mts and 400mts events and concluded that the similar explosive strength and maximum leg strength [Tiwari et al. \(2012\)](#). Also, the Conducted study between jumper, thrower, sprinter and concluded that Throwers and sprinters had less explosive leg strength than jumpers [Singh \(2018\)](#). On the other hand, [Sandeep and Kumar \(2016\)](#) studied the explosive power between kho kho and kabaddi players and the result shows that Kabaddi players have more explosive power than Kho-Kho players. On the other hand, it was discovered that the muscular strength of kabaddi and kho-kho players

differed significantly [Velu and Subramani \(2018\)](#). Players of volleyball were found to have more leg strength than those of the other two sports, according to the findings [Patel \(2019\)](#). It was discovered that kabaddi players have greater leg, arm, and shoulder strength than kho-kho players [Sharma and Nathial \(2016\)](#). Men's intercollegiate kabaddi players improved their muscular strength and flexibility after 12 weeks of Mallakhamb and tai chi training [Natarajan \(2018\)](#). When comparing the effect of flywheel training on shoulder strength and leg strength among kabaddi players to the control group, the study found a significant improvement in shoulder strength and leg strength [Subramani \(2019\)](#). Also, [Tripathi and Sharma \(2013\)](#) studied in terms of explosive leg strength of other games and concluded that handball players outperformed basketball and netball players. According to the findings of [Prabhu and Sudhakara \(2019\)](#), the results show that the shoulder strength of male wrestlers and judo players differed significantly. When comparing volleyball players to handball players, the results of the standing broad jump test show that volleyball players have more leg strength [Kumasi et al. \(2019\)](#). According to our study findings show that athletics players mean is better than kabaddi players because maybe most of the athletics players are throwers in our study. Shoulder strength is needed to do throwing movements and Throwers require more strength also. On the other hand, kabaddi players mean is better than athletics players because maybe Leg power is required for lots of movements in Kabaddi, as well as lots of other activities that necessitate a lot of leg power.

#### 4. CONCLUSIONS

The following conclusions are drawn based on the findings and within the limitation of the study. There was no significant difference in strength of the shoulder between kabaddi and athletics players taken for the study, but athletics players are having more shoulder strength than kabaddi players. also, no significant difference was found in leg power between kabaddi and athletics players, but kabaddi players are having more leg power than athletics players.

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