

## COMPARISON OF STRENGTH ALONG WITH AGILITY IN DIFFERENT SPORTS ATHLETES

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### Abstract:

**Background:** - Football and Volleyball are two competitive sports where players must possess a high level of physical fitness in order to execute the tactical and technical skills they have learnt with ease and effectiveness.

**Aim:** The purpose of this study is to examine the strength and agility of semi-professional football and Volleyball players.

**Objective:** To compare Volleyball and football players' strength using the vertical leap test and their agility using the hexagonal agility test.

**Study design:** Comparative study

**Method:** The institute's ethics committee granted its approval, and informed written consent was acquired. The players were vetted based on both inclusion and exclusion standards. 50 male athletes participated in this study, of whom 25 played football and 25 played Volleyball. Two tests were conducted: the vertical leap test for strength and the hexagonal agility test for agility.

**Result:** The independent-t test was employed because the data was normally distributed and was computed using SPSS version 26. Agility is one area where players differ statistically significantly ( $p=0.01$ ). Strength differences between players are statistically not significant ( $p=0.14$ ).

**Conclusion:** Players differ from one another in terms of agility. Two sports seem to have different demands, thus recruiting and training should take that into account.

**Keywords:** Football, Volleyball, Hexagonal agility test, Vertical jump test

### INTRODUCTION

There's almost no country where football isn't played and loved; it's far more than just a ball game. For kids ages 5 to 6, football is also offered as a sport in schools. Children who play football enhance their physical, mental, and social skills because the game is a team sport that requires players to communicate constantly with one another.<sup>[1]</sup> Volleyball is a high-intensity sport that is played sometimes. It comprises of four trainable components that must be taken into account. In order to be ready for this scenario, Volleyball players are improving their physical, technical, tactical, and psychological abilities. The players' general degree of preparedness is directly tied to their performance, both individually and as a team. It's crucial to keep in mind that the player's physical preparation must be assessed, maintained, and, if necessary, enhanced.<sup>[2]</sup> While some physical attributes, such speed, coordination, power, strength, and agility, are similar between football and Volleyball, others could be more specific. To gain a better understanding of the unique physical requirements for football and Volleyball, coaches, recruiters, and the sports science community could find it useful to compare Volleyball and football players.<sup>[3]</sup> In order to avoid or outrun opponents, athletes need to possess a variety of technical, tactical, and physical abilities. Agility is the term for this.<sup>[4]</sup> Coaches and strength

and conditioning specialists often employ performance tests, such as the vertical leap, to assess an athlete's athletic ability. This enables them to identify an athlete's strong and weak points, monitor and record their progress, or rank and arrange players. [5] The purpose of this study is to examine the strength and agility of semi-professional football and Volleyball players. to compare football and Volleyball players' strength using the vertical jump test and their agility using the hexagonal agility test.

### **MATERIALS & METHODS**

A cross-sectional survey was carried out with players of Volleyball and football. The data sources came from different academies. Semi-professional athletes make up the group of players included in the study. 25 football players and 25 Volleyball players from the different Academy were among the 50 male athletes that the researcher had chosen. The players were vetted based on both inclusion and exclusion standards. Individuals who satisfied the inclusion requirements were enlisted and assigned to the research. Of the 50 male athletes that met the requirements for admission, 25 played Volleyball and 25 played football. The Convenient Sampling method was used to choose the participants. Agility and strength were the chosen motor fitness factors for the current investigation. Many tests, such as the Hexagonal Agility Test to gauge players' agility and the Vertical Jump Test to gauge players' strength, were employed in the test administration process. The mean, standard deviation, and independent t-test comparative statistical approach were utilized for each selected variable in order to ascertain the difference between the football and Volleyball player groups. A significance threshold of 0.05 was used.

The purpose of the test is to compare the strength and agility of football and Volleyball players using the vertical leap test and the hexagonal agility test.

Inclusion: (1) Players between the ages of 15 and 27 are included; (2) Male players are included; (3) Players who wish to join voluntarily; (4) Players with at least a year's experience playing Volleyball and football were chosen; (5) Players who play Volleyball and football six days a week for two hours each day were chosen.

Exclusion criteria were as follows: (1) Participants with musculoskeletal complaints within the last three months were excluded; (2) Participants with neurological, cardiovascular, giddiness, or balance issues were excluded. (1) Players who had undergone surgery within the previous six months were not eligible.

### **RESULT**

In order to compare the physical fitness component factors of Volleyball and football players, data was gathered and statistical analysis was performed. To analyse the data, SPSS Version 26 was used. The mean and standard deviation values were calculated using descriptive statistics. Since the data was regularly distributed, group comparisons were made using the independent-t test. At a five percent significance level, the results were assessed. The baseline traits of Volleyball and football players are shown in table -1. A comparison of skill-related physical fitness metrics between Volleyball and football players may be seen in Table 2-2. Football and Volleyball players' respective mean agility values were  $11.17 \pm 1.34$  and  $12.83 \pm 2.94$  in Table 2. In Volleyball and football players, the p value for agility was 0.01, which is less than 0.05. Thus, there was a discernible difference between football and Volleyball players on the hexagonal agility test. Despite this, football players' agility is more important than Volleyball players'. Football and Volleyball players' mean scores on the vertical leap test were  $42.73 \pm 7.30$

and  $38.98 \pm 10.72$ , respectively. In football and Volleyball players, the vertical leap test had a p value of 0.14, which is higher than 0.05. Therefore, there was no discernible difference between Volleyball and football players in the Vertical Jump Test results.

**TABLE -1 Baseline Characteristics of Football and Volleyball Players**

Domains	FOOTBALL	VOLLEYBALL
AGE	$17.56 \pm 2.27$	$17.89 \pm 3.50$
HEIGHT	$172.26 \pm 7.34$	$160.29 \pm 11.66$
WEIGHT	$58.93 \pm 9.17$	$67.69 \pm 12.14$
BMI	$18.70 \pm 2.91$	$22.42 \pm 4.25$

**TABLE-2 Comparison of Skill Related Physical Fitness Parameters Between Football and Volleyball Players**

Domains	FOOTBALL	VOLLEYBALL	p-value
Agility	$10.17 \pm 1.34$	$11.83 \pm 2.94$	0.01
Strength	$40.73 \pm 7.30$	$37.98 \pm 10.72$	0.14

## DISCUSSION

Using the hexagonal agility test and the vertical leap test, this study evaluated the strength and agility of football and Volleyball players. A total of 50 male athletes—25 football players and 25 Volleyball players—were looked at. According to this study, football players are more agile than Volleyball players. Additionally, there is no strength difference between football and Volleyball players. Training should take into account the distinctions between the athletes since they are trained differently or are different from one another by nature. et al., Kariyawasam A (2019) [6] Comparative analysis of the physical fitness and skill levels of Sri Lanka's national Volleyball and football teams was done. Better upper and abdominal endurance, isometric grip strength, lower body strength, running speed, explosive throwing power, vertical jumping power, balance, and coordination were exhibited by Sri Lankan Volleyball players competing at the national level. Football players competing at the national level possessed superior VO<sub>2</sub>max, reduced fat percentage, upper body strength, flexibility, and reaction time. In 2020, Sukhiyaji RB et al. [7] conducted a study to compare the young college male Volleyball and football players' skill-based physical fitness, including agility, power, and speed. Football players had greater agility than Volleyball players. Volleyball players were more affected by VJH than football players. In the 20-meter sprint test, there was no difference between football and Volleyball players. Thakur V. and others [8] carried out Comparative analysis of the physical attributes of male table tennis and badminton players. The results showed that there was no significant difference in the strength, endurance, or flexibility components between male table tennis and badminton players, but there was a substantial difference in speed and agility. Kodeeswaran A. H. and colleagues (2021) [9] conducted comparison research comparing certain aspects of football and Volleyball referees' physical fitness. When compared to football referees, Volleyball referees have a higher speed level. When compared to Volleyball referees, football referees have a higher level of speed endurance.

## CONCLUSION

There is a statistically significant difference in the two sports' agility. Football players had greater agility than Volleyball players. There is no strength differential between football and Volleyball players. Since sports seem to be distinct, recruiting and training should take these distinctions into account.

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