

A Comparative Study on Agility and Strength Between Basketball and Football Players

Komal Raste¹, Dr. Aniket Solanki (PT)²

¹MPT student, ²Assistant Professor,
Apollo Institute of Physiotherapy, Gujarat University, Ahmedabad, India

Corresponding Author: Komal Raste

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ABSTRACT

Background: Basketball and football are two competitive sports that need a high level of physical fitness from their players in order for the players to execute the technical and tactical abilities they have learned in an effortless and effective manner.

Aim: This study aims to compare the Agility and Strength between semi-professional Basketball and Football players.

Objectives: To compare the Agility between Basketball and Football players by hexagonal agility test & Strength between Basketball and Football players by Vertical jump test.

Study design: Comparative study

Method: Ethical clearance was taken from the ethical committee of the institute and informed written consent was obtained. players were the screened for the inclusion and exclusion criteria. This study consisted 54 male players enrolled, out of which 27 were football and 27 were basketball players two test were performed hexagonal agility test for agility and Vertical jump test for strength.

Results: It was calculated using SPSS version 26 and as data was normally distributed independent-t test was used. There is statistically significant difference found between players for agility ($p=0.01$) There is statistically non-significant difference found between players for strength ($p=0.14$).

Conclusion: There is difference found in agility between players. Demand of two sports appears to be unique, thus training as well as recruiting should reflect differences.

Keywords: Football, Basketball, Hexagonal agility test, Vertical jump test

INTRODUCTION

Football is a sport that is played and adored in practically every nation it is much more than just a game of balls. In schools, football is also a sport for children between the age of 5 and 6year. In football, children develop physical, mental and social abilities because it's a team sport that demands constant communication between players.^[1] The basketball sport is high intensity on an intermittent basis. It consists of four components that need to be considered and should be trainable. Basketball players are being prepared in this situation by honing their physical, technical, tactical, and

psychological skills. Performance on both the individual and team levels is closely correlated with the players' overall level of preparedness. When concentrating on the player's physical preparation, it is important to remember that it has to be evaluated, maintained, and, if required, improved.^[2] While there are some physical requirements that are comparable between basketball and football, such as speed, coordination, power, strength, and agility, other requirements may be more particular. Coaches, recruiters, and the sports science community may be interested in comparing basketball and football players to better understand the

special physical requirements for each sport.^[3] Athletes that want to dodge or pursue opponents must have a combination of physical, technical, and tactical skills. This is known as agility.^[4] Performance tests, like the vertical leap, are frequently used by coaches and strength and conditioning specialists to evaluate an athlete's athletic abilities. This allows them to pinpoint an athlete's strengths and weaknesses, track and document their development, or rank and place players.^[5] This study aims to compare the agility and strength between semi-professional basketball and football players. To compare the agility between basketball and football players by hexagonal agility test and strength between basketball and football players by vertical jump test.

MATERIALS & METHODS

A cross sectional study was conducted among the Football and Basketball players. The sources of data were collected from various Academy of Ahmedabad. The level of players who were taken in the study are semi-professional players. The researcher selected 60 male players, out of which 30 were football and 30 were basketball players from Academy of Ahmedabad. Players were the screened for the inclusion and exclusion criteria. Subjects meeting the inclusion criteria was recruited and allocated into study. In that 54 male players meeting the inclusion criteria out of which 27 were football and 27 were basketball players. The subjects were selected by Convenient Sampling method. The selected motor fitness variables were chosen for the present study as agility and strength. In the administration of the test, various tests were used to measure the variables like hexagonal agility test to measure agility of the players, Vertical Jump to measure the strength of the players. Mean, standard deviation and comparative statistical technique of independent t-test separately for each selected variable to determine the difference between the groups of football and basketball players. Level of significance was set at 0.05.

Objectives: To compare the Agility between Basketball and Football players by hexagonal agility test & Strength between Basketball and Football players by Vertical jump test.

Inclusion: (1) Age group of players is 12 to 24 years (2) Male players are included (3) Players who want to participate willingly (4) experience of Playing Football and Basketball for minimum 1 year were selected (5) Players who play Football and Basketball for 6 days per week for 2 hours per day were selected

Exclusion: (1) Participants having any complaint of musculoskeletal conditions from past 3 months were excluded (2) Participants who are suffering from neurological, cardiovascular, giddiness or balance disorders were excluded. (3) players who had done Any surgery in last 6 months were excluded.

RESULT

The data was collected and statically examined to compare the physical fitness components variables of football and basketball players. The data analysis was performed using SPSS Version 26. Descriptive Statistics were used for Mean and Standard Deviation values. As data was normally distributed independent-t test was used for comparison between groups. The results were evaluated a significance level of 5%. In the table -1 we observed the baseline characteristics of football and basketball players. In the table -2 we observed comparison of skill related physical fitness parameters between football and basketball players. In the table-2 mean values of agility in football and basketball players were 11.17 ± 1.34 and 12.83 ± 2.94 respectively. The p value of agility in football and basketball players was 0.01 that is less than 0.05. So, there was significant difference seen in Hexagonal Agility Test between Football and Basketball players. Although Agility of Football players is more significant compare to Basketball players. The mean values of vertical jump test in football and basketball players were 42. 73

± 7.30 and 38.98 ± 10.72 respectively. The p value of vertical jump test in football and basketball players was 0.14 that is greater than 0.05. So, there was no significant difference seen in Vertical Jump Test between Football and Basketball players.

TABLE -1 Baseline Characteristics of Football and Basketball Players

	FOOTBALL	BASKETBALL
AGE	17.56 \pm 2.26	16.89 \pm 3.51
HEIGHT	176.26 \pm 7.34	169.29 \pm 11.66
WEIGHT	60.93 \pm 9.17	66.69 \pm 12.14
BMI	19.70 \pm 2.91	23.42 \pm 4.25

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

	FOOTBALL	BASKETBALL	p VALUE
AGILITY	11.17 \pm 1.34	12.83 \pm 2.94	0.01
STRENGTH	42.73 \pm 7.30	38.98 \pm 10.72	0.14

DISCUSSION

This study attempted to evaluate the Agility and Strength of Football and Basketball players using hexagonal agility test and Vertical jump test in total 54 male players, including 24 Football players and 24 Basketball players, were examined in this study. In this study Agility is more in Football players than Basketball players. And no difference in Strength between Basketball and Football players. The athletes in the sport are trained differentially and or inherently different so that training should reflect differences.

Kariyawasam A, et al. (2019) [6] Conducted Comparative study on skill and health related physical fitness characteristics between national basketball and football players in Sri Lanka. Sri Lankan national level basketball players had better upper body endurance, abdominal endurance isometric grip strength, lower body strength, running speed, explosive throwing power, vertical jumping power, balance and coordination. The national level football players had better VO₂max, upper body strength, flexibility, reaction time, agility and lower fat percentage. Sukhiyaji RB et al. (2020) [7] Conducted study on To Compare the Skilled based Physical Fitness Such as Agility, Power and Speed between the Young College Male Basketball and Football Players. Agility was better in

football players than basketball players. VJH was more in basketball players than football players. There was no difference found in 20-meter sprint test between basketball and football players. Thakur V, et al. [8] Conducted Comparative study of physical fitness components of table tennis and badminton male players. The results found significant difference in speed, and agility and no significant difference in strength, endurance and flexibility components between table tennis and badminton male players. Kodeeswaran AH et al. (2021) [9] Conducted Comparative study on selected physical fitness variables between basketball and football referees. The speed level is better to the basketball referees compare with the football referees. The speed endurance level is better to the football referees compare with the basketball referees.

CONCLUSION

Statistically significant difference seen in Agility between two sports. Agility was better in Football players than Basketball players. There is no difference found in Strength between Basketball and Football players. Sport appears to be unique, thus training as well as recruiting should reflect the differences.

Declaration by Authors

Ethical Approval: Approved

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Conflict of Interest: The authors declare no conflict of interest.

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