



Title- Estimation of Static balance test among Basketball and Football players.

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ABSTRACT

Background: Balance plays a vital role in many sports. Static Balance has an exceptional effect on the performance of sports players and for injury prevention. Football and Basketball players require static balance for execution of sports specific skill. Thus, the purpose of this study was to compare the static balance in male football and basketball players.

Methods: A total of 50 healthy female players, football (n=25) and basketball (n=25) from Sports Academies of Punjab were selected for the study with purposive sampling. Static balance was assessed by using Flamingo Balance test.

Results: Mann-Whitney Test was used to determine the significant difference between football and basketball players.

The result of the study showed that there was a significant difference in static balance between male football and Basketball players($p<0.01$).

Conclusion: Basketball players displayed inferior static balance than the football players by using Flamingo BalanceTest.

Keywords: Flamingo Balance Test, Static Balance, Football, Basketball, Balance, Sports Performance.

INTRODUCTION

Balance can be defined as the ability to maintain the body's center of gravity over the base of support ¹. Optimal balance is a result of neuromuscular actions in response to continuous feedback from the visual, vestibular and somatosensory system by continuously adjusting and maintaining correct body position about the supporting surface and the surrounding environment ²⁻⁵

For successful sports performance, static balance is a key factor in the development of sensory-motor systems. In the field of sports, especially in basketball and football, static balance play a fundamental role in sports specific postural control and contribute to efficient performance. Impaired stability and balance can be found in these sports

specific movement. Researchers suggested that balance impairment has been one of the risk factors for injuries in a variety of sports⁶⁻⁷ LeleniSreekarini et al. found the prevalence of sports injuries in Adolescent Athletes. Based on their findings, the rate of injury in lower extremity for football 58% and basketball 60%. They observed that sprain and strain are the most usual injuries at knee and ankle joint. In these usual injuries, an ankle sprain is the commonest type of injury observed 30% in basketball and 20% in football players⁸. In the field of sports, especially in basketball and football, balance plays a fundamental role in sports specific postural control and contribute to efficient performance. Various levels of the sensory motor system differ according to sports practiced to perform skillfully and protect the neuromuscular systems from injury which encourages to excel in sports like basketball players⁹. A basketball player has to perform upper limb passing, shooting, and dribbling skills with wearing shoes on flat, stiff surfaces¹⁰. Sport specific skill and environmental demands need balance which is necessary for safe and effective execution in sporting movements without losing balance¹¹. Impaired stability and balance can be found in these sports specific movement. This enhances the ability to use somatic sensory which improves postural capabilities¹¹⁻¹³. Researchers suggested that balance impairment has the one of the risk factors for injuries in a variety of sport injuries^{13, 14}. An ankle sprain is the commonest type of injury observed 30% in basketball players¹⁴. Many authors suggested that decrease in static balance is a risk factor for ankle sprain injury in basketball¹⁵⁻¹⁶. Players are recommended to improve their static balance because it is not only improves sports performance but reduces injury of ankle^{16, 17}. Flamingo balance test is a total body balance test to evaluate static balance. It accomplishes the requirement of simplicity, low cost and capable of mass investigation¹⁷⁻¹⁹.

SUBJECTS AND METHODS

This is observational study conducted from the sports authority GNDU, Khalsa College, Amritsar. Ethical approval was taken before recruiting patients into the study.

50 subjects has been taken on the basis of inclusion and exclusion criteria.

- Group A-25 (basketball)
- Group B-25 (football)

Inclusion criteria-

Age-(18-28 years)

Competing in one specific sports

Exclusion criteria-

Lower limb injury⁴

Vestibular problem

Visual problem

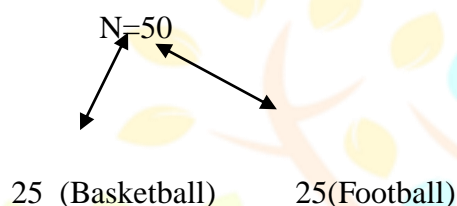
Knee, ankle and hip surgery

TOOLS AND INSTRUMENTS-

- Stopwatch,
- Flamingo Rod
- Hand-Made Grid
- Firm Surface
- Flamingo Test

PROCEDURE- Proper consent has been taken and explanation of the whole procedure has been given before the study is conducted.

Total 50 no. of subject has been taken on the basis of inclusion and exclusion criteria



Static Balance: It was measured by Flamingo Balance Test (FBT). The subjects stood on the beam which was 50 cm long, 5 cm height and 3 cm wide. The subject was told to balance on one leg with bare foot, the free leg was flexed at the knee, and the foot was held close towards buttocks and hands were on the iliac crests, standing like a flamingo. The evaluator starts the stopwatch, and the subjects were told to stand in the position mentioned above for 1 min. The stopwatch was stopped each time the subjects lost the balance and started again until they lost the balance. Every

player performed three attempts with eye-open in each leg, the number of falls was recorded, and they were averaged for analysis¹⁵⁻¹⁶.

DATA ANALYSIS

For investigating the difference of static Balance between groups (Basketball and Footballplayers) was evaluated using the Mann-Whitney test.

	Mean (\pm SD)	p Value
Basketball players	5.44 \pm 0.95	4.38
Football players	8.31 \pm 1.03	7.91

RESULT

The result of the Mann-Whitney test showed a statistically significant difference between the static balance value of Basketball players (8.31 \pm 1.03) and value of Football players (5.44 \pm 0.95) ($p < 0.01$). A high score shows that there were more errors in flamingo balance test. So it was seen that Football players had higher static balance than basketball players.

DISCUSSION

Balance is considered to be an important aspect of change continually . In literature review, it can be seen performance of all individuals whilst undertaking that a lot of study have been applied about the various daily activities, which is achieved by a balance differences between the different sports complex process involving the function of branches and sedentary people, nevertheless any musculoskeletal and neurological systems ¹⁶⁻¹⁸. This study shows that statistical differences observed with in Basketball and Football players may be associated with different nature and skills of the game. Football players have to perform lower extremity actions such as passing, shooting and dribbling skills during the match which requires maintaining a strong static balance. A football player needs a unipedal posture to perform different skilled movement like running at high speed, powerfully kicking of the ball and rapidly changing the direction ^{12,18}. In comparison to football players, basketball players seldom maintain motionless one leg position and frequently pay attention to sign related to the ball and player's position ¹⁹⁻²⁰. So, it is assumed that Basketball player might less develop static balance than Football players. As per this study result, the maximum amount of postural sway observed during single leg stance in basketball players. The Basketball players were having lower balance ability than football players. The superiority of football player may be derived from sports specific skill training. So findings of our study suggest that basketball players require balance training programs to reduce the risk of injuries and improve sports-specific performance. Balance training effectively prevents injury re-occurrence and improve postural skill in term of enhancing motor performance in various sports. Balance exercise executed to not only focus on improving postural control but also the rate of force development and regeneration of injury. Research shows that basketball players with a composite score below 89% had an increased probability of injury from 37.7% to 68.1%. Therefore a cut point of 89% composite leads to injuries. For high school basketball players, the cut point was 94% . A dynamic and static balance testing helps in prevention of injuries and sports rehabilitation. It is a reliable measure and dynamic test to predict of lower limb injury, to identify dynamic balance deficits in athlete with lower limb condition²¹. Therefore the purpose of this study to examine the estimation of static balance testing among basketball players and football players. In addition to these, it has been seen that balance trainings have reduced the risk of some musculoskeletal system injuries like ankle sprain and after both static and dynamic balance trainings, it has been observed that training groups have lower risk of injury limitation of this study should be recognized. This study was conducted only on the small size of the sample.

CONCLUSION

The result of this study may be concluded that there is a significant difference in static balance in between Female Football and Basketball players. The football players demonstrate greater static balance compared with basketball players.

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