ISSN PRINT 2319 1775 Online 2320 7876

 Journal Volume 11,Iss 12, 2022

# COMPARISON OF JUMP SHOOT ACCURACY AMONG NATIONAL LEVEL U 18 MALE FEMALE BASKETBALL PLAYERS

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## Abstract

The Objective of the study is to assessed the jump shoot accuracy of U-18 male and female basketball players of Indian origin participating at the national level. A total of 60 players (30 males and 30 females) were selected using convenience sampling. The criterion measure for assessing jump shoot accuracy involved each player taking (BJSAT) eight shots from different positions, with scoring criteria ranging from 0 to 3. The collected data was analyzed using descriptive statistics and an independent samples t-test, assuming equal variances. The statistical analysis revealed no discernible variation in the means of jump shoot accuracy between the male and female players. The findings suggest that gender does not have a significant impact on jump shoot accuracy in this specific context. However, it is important to consider the limitations of the study, such as the sample size and possible biases, and Additional investigation is recommended to validate these initial results.

## Introduction

One of the most crucial shots in basketball is the jump shot. [3,5]. It is a basic shooting technique in which a player throws the ball from a straight vertical leap towards the basket [2,4]. The jump shot is performed with one hand, while the second hand holds the ball in position until the shot is completed [1]. The leap can be executed while moving, such as dribbling or standing. John Miller Cooper, an American teacher, is claimed to have founded the jump shot [6,7]. He is said to have used the jump shot as an offensive tactic for the first time in history while playing basketball for the University of Missouri [10].

Straight vertical jumps are performed by explosively extending the legs while simultaneously raising the arms [8,9]. The actual throw is then executed by the player with his hand at the highest point of the jump phase [11].

Athletes only use one hand or arm for the throwing action of the jump shot. The ball is held in the throwing hand by the second hand until the throw is made [12]. The second hand supports the ball from the right or left until the throw, depending on whether the ball is played with the left or right hand. In this situation, the player has more control over the throw's execution [13].

The jump shot is often divided into three stages [14,15]:

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1. Begin with a straight vertical leap.
2. The actual throwing action is begun just before reaching the highest point of the leap. (Arm-hand-guidance).
3. The ball should not leave the throwing hand until it reaches the peak (the highest point of the leap).

All of the above steps seamlessly flow into one another. The landing brings the lowest section of the leap to a close. The jump shot can be executed from a standing or moving position. (Jump shot after receiving a pass or dribble jump shot) [16].

The motor components of control and execution were linked to shooting ability. Learning and practising shooting skills correctly from childhood is one of the criteria that predict a child's future success [17]. Basketball is a quick and complicated sport. There are various exams that may be used to assess shooting ability [18]. In this study, male and female national-level basketball players' jump-shooting accuracy was examined.

The purpose of this research is to review the existing literature on basketball Jump shooting performance among youth basketball players. To understand the impact of those game-related conditions on the shooting motor skills, it was particularly interesting to figure out which game-related conditions are relevant for the jump-shooting performance.

## Methodology

### Selection of Subjects

Using the convenience sample technique, sixty (N = 60) U-18 male (30) and female (30) basketball players of Indian heritage from national teams from various states were chosen for the study. The subjects for the study will be between the ages of 14 and 18.

### Criterion Measure of BJSAT

To assess the competitive basketball jump shooting accuracy of national players from various states, each player was given eight shots (four two-pointers and four three-pointers) from different positions (two-pointers and three-pointers), as illustrated in figure 1. As stated in Table 1, the score arrangements ranged from 0 to 3. The overall test performance for each trial was evaluated using the average score for each of the eight shots attempted.

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**Table-1 Scoring criteria for the Basketball Jump Shooting Accuracy Test**

| SCORE | DESCRIPTION |
|---|---|
| **3** | The ball passes through the basket without making contact with the rim or backboard. |
| **2** | Before passing through the basket, the basketball makes contact with the rim or backboard. |
| **1** | The ball strikes the rim or backboard but does not pass through the basket. |
| **0** | Basketball never comes into contact with the rim or backboard and never passes through the basket. |

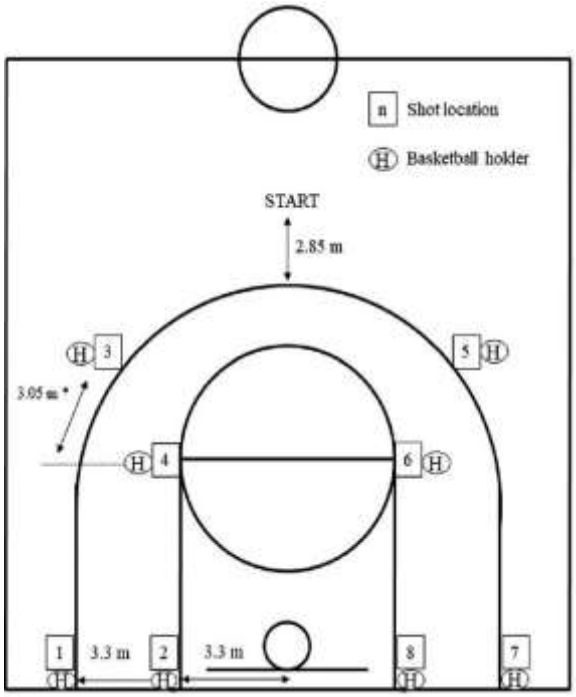


Figure – 1: The above diagram reflects the various shooting positions from which individuals perform test shots.

**Statistical Technique**

The independent sample t-test was used at the 0.05 level of significance to assess the data. , and to make the data easier to understand, descriptive statistics were used in its interpretation. The data was analyzed using IBM SPSS 20.

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## Analysis of data and result

**Table 2:** displays the descriptive statistics of the data collected to assess the jump-shoot accuracy of national-level basketball players.

**Group Statistics**

| | Group | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| Jump Shoot Accuracy | Boys | 30 | 15.77 | 1.50 | .27 |
| | Girls | 30 | 15.03 | 1.69 | .30 |

**Table 3:** displays the Independent Sample t-test of jump shoot accuracy.

**Independent Samples Test**

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | F | Sig. | T | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | | Lower | Upper |
| Jump Shoot Accuracy | Equal variances assumed | .30 | .58 | 1.77 | 58 | .08 | .73 | .41 | -.09 | 1.56 |
| | Equal variances not assumed | | | 1.77 | 57.19 | .08 | .73 | .41 | -.09 | 1.56 |

According to the statistics, an independent sample t-test was used to compare the means of two groups on a variable termed "Jump Shoot Accuracy." The test assumes that the two groups have equal variance.

First, The variance equality test for Levene was conducted. The F-statistic estimated is 0.30, and the related p-value (Sig.) is 0.58. The null hypothesis cannot be disproved of equal variances since the p-value is bigger than the customary significance level of 0.05. This implies that the premise of equal variances between groups is sound.

The t-test for equality of means was then run. With equal variances assumed, the estimated t-statistic is 1.77, and the corresponding degrees of freedom (df) are 58. This test's p-value (sig. 2-tailed) is 0.08, which is larger than 0.05. As a result, The null hypothesis cannot be disproved

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of equal means. This implies that there isn't statistically notable distinction between the two groups' mean on the "Jump Shoot Accuracy" variable.

The mean distinction between the two groups is 0.73, with 0.41 standard error difference. The difference's 95% confidence interval varies from -0.09 to 1.56. This interval specifies a set of numbers within which we may be 95% certain that the genuine population mean difference exists.

In summary, assuming equal variances, The two groups' means do not significantly differ from one anotheron the "Jump Shoot Accuracy" variable based on the statistics provided.

## Discussion

The research aimed to compare the means of male and female national-level basketball players on a statistic known as "jump shot accuracy." The independent sample t-test findings showed that there was no significant difference in the means of the two groups. The assumption of equal variances across groups was tested using Levene's test prior to conducting the t-test. With an F-statistic of 0.30 and a p-value of 0.58, the test resulted in a non-significant result. This suggests that it is appropriate to assume equal variances, and we may proceed with the t-test.

The estimated t-statistic for equality of means, assuming equal variances, was 1.77 with 58 degrees of freedom. The corresponding p-value (sig. 2-tailed) was 0.08, which is larger than the 0.05 threshold for significance. As a result, we were unable to reject the null hypothesis of equal means. This indicates that there is no difference between the two groups that is statistically significant in terms of "jump shot accuracy". It was determined that the mean difference between the two groups was 0.73, with a standard error of 0.41. The difference's 95% confidence interval ranged from -0.09 to 1.56. This interval specifies a set of numbers within which we may be 95% certain that the genuine population mean difference exists.

## Conclusion

Based on the information provided, this indicates that there is no difference between the two groups that is statistically significant in terms of "jump shot accuracy," assuming equal variances. These data imply that the alterable "jump shot accuracy" does not significantly differ between the male and female national-level basketball players studied. However, it is critical to note the study's limitations additionally other factors that may impact the results, such as sample size, selection bias, or other uncontrolled variables. More study and analysis may be required to go deeper into the subject and corroborate these preliminary findings.

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