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# Vertical Jump Performance and Observed Smash Ability in Male Volleyball Athletes: A Descriptive Study of the Skavola Team

**Nadhif Muzakkiy Azhar[1*], Gelsi Faiz Raydi [1], Ayunita Setya Syafadillah[1]**

[1]Faculty of Sports and Health Sciences, Universitas Negeri Surabaya, INDONESIA

*Corresponding Author: nadhif.23281@mhs.unesa.ac.id

**ABSTRACT**

Vertical jump performance is an important physical characteristic in volleyball because it contributes to an athlete's ability to reach an effective ball-contact position during a spike. This study aimed to describe vertical jump performance and observed smash ability among male volleyball athletes of the Skavola team. A descriptive quantitative design was employed, involving 12 male athletes selected through purposive sampling. Each athlete performed three attempts, and the highest recorded jump was used for analysis. Smash ability was classified observationally as good, sufficient, or insufficient. Vertical jump height ranged from 40 to 67 cm, with a mean of 57.83 cm. Based on the classification standards adopted in the study, the mean fell within the above-average category. The original assessment table classified nine athletes as having good smash ability, two as sufficient, and one as insufficient. However, the observational criteria used to assign these categories require further clarification. The findings describe variation in jumping performance and observed smash ability within the team but do not establish a statistical association or causal effect. Future research should use standardized smash assessment procedures and an appropriate analytical design to examine the relationship between jumping performance and volleyball-specific technical outcome.

**Keywords:** vertical jump; volleyball; smash ability; descriptive study; athlete assessment

## INTRODUCTION

Sport can increase fitness and maintaining health , as well as become means development self or individual through achievements obtained from every branch sport certain . In Indonesia it is known various branch sport like football , basketball, volleyball , badminton parry . One of the favorite sport Indonesian society is volleyball , according to International Volleyball Federation, all over the world there are around 500 million people play volleyball . There are several technique in Volleyball game that must be played controlled by a person athletes , namely serve , pass, smash and b lock. Smash and block dominated by style leap vertical the usual players become points key victory . (Wahyuni et al., 2021) .

Volleyball also requires condition physical , technical , tactical and mental in its implementation. One of the supporting techniques namely smash. But Lots athletes who have not control smash technique with okay , where moment did a smash yet produce maximum jump . Explosive power muscle legs is component condition physical requirements in mastery volleyball smash technique . The test used For measure strength Power explosion muscle legs that is use Vertical jump test . (Putri Isabella & Perwira Bakti, 2021). According to Hendra and Carolus in Putri Isabella & Perwira Bakti, 2021. Vertical jump is the ability of someone to jump straight up in a way that is not use start . Vertical jump can also be interpreted as jumping as high as Possible with centralized attention to strength leg muscles up to reach a maximum leap straight up. Jump vertical This generally used by several branch sport like volleyball, basketball and sports that aim

to increase explosive muscle power in the legs, so that the ability to jump can done as much as possible.

The ability to leap in do smash technique is very dominant For success do a smash for turn off opponent, because That vertical jump is very necessary attention to support technique leap in success technique base said ( Rosadi , in Palinata et al., 2023) . The vertical jump ability possessed by a person different between the one with others. This is influenced by body anatomy This vertical jump ability is also influenced by training. Whereas according to pranatahadi in (Hermansyah & Permadi, 2018) smash is an action hit the ball to the opponent's field, so the ball passes over the net and resulted party against difficult bring it back . An effective smash during an ongoing is with method hit the ball from on a net called a spike. Smash is something techniques that have something complex movements consisting of:

1. Initial step
2. Rejection For jump
3. Hit the ball while floating in the air
4. Upon landing return after hit the ball

Smash is also possible interpreted as action hit the ball to field opponent , so the ball moves pass on net or net so that result in party against difficult return . Smash shots are also often also called spike, where is form the most attacks used in effort get value by a team.

## METHODS

This study used a descriptive quantitative design to document vertical jump performance and observed smash ability among male volleyball athletes of the Skavola team. The analysis focused on the minimum, maximum, and mean vertical jump heights, together with the distribution of smash ability categories recorded in the original assessment table. The study involved 12 male volleyball athletes from the Skavola team. Participants were selected through purposive sampling based on the eligibility criteria established by the researchers. The original manuscript identified the participants as male students who were active members of the team. Information regarding age, training experience, competitive level, and the specific inclusion criteria should be added to provide a clearer description of the sample.

Vertical jump performance was assessed using a vertical jump test. Each athlete performed three attempts, and the highest recorded jump was used as the athlete’s result. Jump height was expressed in centimeters. Smash ability was classified into three categories: good, sufficient, and insufficient. The original assessment table contained individual classifications for all 12 athletes. However, the operational criteria, observation procedure, and reliability of these classifications were not documented adequately in the original manuscript. These details should be clarified before publication. The manuscript should also identify the equipment used, the testing procedure, the warm-up protocol, the rest interval between attempts, and the method used to calculate jump height. These details are necessary to improve transparency and reproducibility.

Descriptive statistics were used to summarize vertical jump height. The minimum, maximum, and arithmetic mean were calculated from the 12 recorded values. Smash ability was summarized by counting the athletes in each observational category. The vertical jump results were interpreted using the classification standards presented in the original manuscript. Because the study did not include a validated quantitative measure of smash performance or an inferential statistical analysis, the findings were interpreted

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descriptively. No causal or statistical relationship between vertical jump height and smash ability was inferred.

## RESULTS AND DISCUSSION

### Results

Research result to ability Volleyball athlete Skavola's vertical jump is much total of 12 students man served in form table . In study This sample requested For smash 3 times with take results measurement leap highest .

Table 1. is the result data research that has been done , then after tall leap

| No | Name | Jump Height | Good | Smash Ability Is Enough | Not Enough |
|---|---|---|---|---|---|
| 1. | Setiawan Ferry | 53 Cm | | X | |
| 2. | Rizki Adi Syahputra | 62 Cm | X | | |
| 3. | Ahbab Al Khoir | 65 Cm | X | | |
| 4. | Deni Syaputra | 40 Cm | | | X |
| 5. | Nur Wahidin | 67 Cm | X | | |
| 6. | Nova Ari | 55 Cm | X | | |
| 7. | Rizki Pratama | 52 Cm | | X | |
| 8. | Irhami Qoliq | 61 Cm | X | | |
| 9. | Hamzah | 56 Cm | X | | |
| 10. | Ade Syahputra | 57 Cm | X | | |
| 11. | Aris Ramadhan | 66 Cm | X | | |
| 12. | Renaldi | 60 Cm | X | | |
| Highest | | 67 Cm | | | |
| Lowest | | 40 Cm | | | |
| Average | | 57.83 Cm | | | |

Table 2. Assessment Vertical jump standards

| Category | Son (Cm) | Princess (Cm) |
|---|---|---|
| Excellent | >70 | >60 |
| Very Good | 61-70 | 51-60 |
| Above Average | 51-60 | 41-50 |
| Average | 41-50 | 31-40 |
| Below Average | 31-40 | 21-30 |
| Poor | 21-30 | 11-20 |
| Very Poor | <21 | <11 |

From the results the can known that leap highest is 67 cm in to in very good criteria (very good ), and for lowest jump is 40 cm in to in below average criteria . For average height leap The men's volleyball athlete , Team Skavola , is 57.83 cm and is included to in above average criteria. Of the 12 students , two of them own sufficient smash ability Good with tall jumps of 53 cm and 55 cm in in above average criteria and one athlete with lack of smash ability Good with tall jump 40 cm below average (below average ). From the results study in Table 1 can also be We Look that student with their average jump is over 55 cm can do a smash with Good.

### Discussion

Vertical jump ability plays a role in smash success as well as in it there is good coordination . Because in volleyball , one of the sports technique the main thing that is important is a smash, a smash is the main blow in attack in business reach victory . For

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reach A success moment do a smash then required high achievement and ability high jump . In do a smash or the ball attack that will beaten completely under control the smasher alone , how much hard ball that will hit and where the ball will go directed depends on the smasher. Good smash supported with muscle power strength good legs . So that the smash can be effective and precise on difficult targets reachable against so aspect supporters on must enhanced . Smash is the main blow in attack in business reach victory . (Jonah in Anggriawan, 2016).

According to (Aguss et al., 2021) Vertical jump ability plays a role in smash success as well as in it there is good coordination . Because in volleyball , one of the sports technique the main thing that is important is a smash, a smash is the main blow in attack in business reach victory . For reach A success moment do a smash then required high achievement and ability high jump . In do a smash or the ball attack that will beaten completely under control the smasher alone , how much hard ball that will hit and where the ball will go directed depends on the smasher. Good smash supported with muscle power strength good legs . So that the smash can be effective and precise on difficult targets reachable against so aspect supporters on must increased . Explosive power is ability somebody For use strength maximum in time as short as . Muscle power legs is ability muscle or a group muscle legs in do movement in a way explosive , as well as muscle legs covering all over member footwork from base thigh to below , as bone member movement lower legs have task important For support body moment do movement or activity other .

Student with tall jumps under 55 cm tend to be Enough or even not enough Good so that No can as much as possible with tall students his jump more tall from they . That thing due to range jump and hand moment still reaching for the ball not enough tall also if meet with blocking the opponent whose jump more tall from they are different with student with more jumps tall leap from 55 cm, they will tend easy For reach out and also direct the ball to area field the opponent who will targeted because view to area against will the more breadth and opportunity For pass dam against will the more big . With thus can interpreted that the more Good Power explosion muscle legs or vertical jump and coordination someone , then the more also good smash ability (Aguss et al., 2021).

## CONCLUSION

Study This show that vertical jump training has an effect to improvement volleyball smash ability in athletes son Skavola's team . Measurement results vertical jump height shows that the average height leap athlete is 57.83 cm, which includes in "above average" criteria . Findings this also indicates existence connection positive between tall jump and smash quality , where the athlete with tall leap more from 55 cm tends to own good smash ability . Therefore that , can concluded that improvement vertical jump ability can contribute to the improvement volleyball smash performance of Skavola team athletes.

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