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SMASH SKILL LEVEL OF MALE ATHLETES OF UKM VOLLEYBALL BINA BANGSA GETSEMPENA UNIVERSITY BANDA ACEH

Salbani[*1], Septi Hariansyah[2]
[1,2]Universitas Bina Bangsa Getsempena, Banda Aceh, Indonesia

***** Corresponding email: salbani@bbg.ac.id

ABSTRACT

This study aims to analyze the level of smash skills in male athletes of Volleyball UKM Universitas Bina Bangsa Getsempena Banda Aceh. This study involved 12 athletes with a focus on three main aspects of smash skills, namely hitting speed, ball direction accuracy, and jump height. The method used is descriptive quantitative, with data collection through direct measurement of each relevant variable. Based on the results of the study, the average athlete's hitting speed is in the Good category (18.0–19.4 m/s), with most athletes showing effective hitting abilities. In terms of ball direction accuracy, 41.7% of athletes are in the Very Good category (≥ 85%), indicating high precision ability in directing the ball when smashing. For jump height, 33.3% of athletes are in the Very Good category (≥ 70 cm), which supports the effectiveness of smashes in avoiding opponent blocks. Overall, the majority of athletes show solid smash skills, although there is still room for improvement in the aspects of speed, accuracy, and jump height. This study provides useful insights for improving training programs in order to improve athlete performance and maximize their potential in matches.

Keywords: *Smash Skills, Hit Speed, Ball Direction Accuracy*

INTRODUCTION

Volleyball is a popular sport that is loved by people in various circles, both at the amateur and professional levels. Volleyball is not just a game, but also a means to develop the physical, mental, and social potential of athletes. In volleyball, there are various basic techniques that are the key to the success

of the game, one of which is the smash(Is & Adi, 2023). Smash is a hard hit that aims to score points by directing the ball to the opponent's area with high power and speed. This technique is a very important aspect in determining a team's victory, because an effective smash can put great pressure on the opposing team and increase player morale. Therefore, smash skills are one of the main focuses in volleyball training, especially among young athletes.

Bina Bangsa Getsempena University Banda Aceh, as one of the higher education institutions that is active in developing sports activities, has a Volleyball Student Activity Unit (UKM) that consistently trains talented athletes. This UKM is not only a place to practice and compete, but also a place for students to hone their technical, tactical, and mental abilities in volleyball.(Nugroho et al., 2021). The male athletes who are members of this UKM have shown high dedication in developing their skills, including in smash techniques. However, to achieve maximum performance, an in-depth analysis of the level of smash skills possessed by these athletes is needed. This is important to know the extent of their ability in applying this technique, both in terms of strength, accuracy, and timing.(Duhe, 2020).

Smash skills are not only influenced by physical factors, such as muscle strength and agility, but also by technical and mental factors. Understanding the correct technique, structured training, and the ability to read game situations are important elements that a volleyball player must have. In addition, mental conditions such as self-confidence, concentration, and calmness also play a big role in the success of a smash.(Sarwita & Is, 2021). Therefore, comprehensive and continuous training is the main key to improving these skills. On the other hand, evaluation of training results must also be carried out routinely to identify the weaknesses and strengths of athletes, so that training strategies can be adjusted to individual needs.(Knobloch et al., 2004).

In this context, research on the level of smash skills in male athletes of the Volleyball UKM, Bina Bangsa University, Getsempena, Banda Aceh, is very relevant.(Sahabuddin et al., 2023). This study aims to provide a clear picture of the athletes' ability to smash, as well as to identify the factors that influence their performance. By understanding this skill level, coaches can design more effective and targeted training programs, while athletes can identify aspects that need to be improved to improve their abilities. Furthermore, the results of this study are expected to be a reference for the development of volleyball in the university environment, as well as provide a positive contribution to the progress of volleyball in Banda Aceh in general.

The approach used in this study involves evaluating smash skills through various indicators, such as hitting speed, ball direction accuracy, and movement efficiency. In addition, this study will also analyze the supporting and inhibiting factors experienced by athletes in developing their skills. The data collection process was carried out through direct observation, interviews with coaches and players, and field testing to measure the technical abilities of

athletes.(Wang, 2023). This method is expected to provide objective and accurate results, so that it can be used as a basis for decision making in developing future training programs.

Volleyball is a sport that relies on team coordination, strategy, and technical ability to score points in a match. One of the main techniques in volleyball is the smash, which is an effective form of attack to break the opponent's defense. Theoretically, smash skills include various elements, such as punch power, direction accuracy, speed, and timing. According to Suharno (2016), an effective smash is influenced by the coordination between lower, middle, and upper body movements. Strong jumping movements, optimal hand positions, and the right angle of the hit are important technical factors that determine the success of a smash. In addition, the success of a smash is also influenced by the athlete's ability to read the opponent's playing pattern, the opponent's block position, and the gaps available to attack.(Budak et al., 2017).

Physiologically, the ability to smash is influenced by muscle strength, explosive power, and body flexibility. Leg muscle strength, for example, contributes to jump height, which gives athletes an advantage in attacking the ball from a height. Shoulder and arm muscle explosiveness also play an important role in producing fast and hard hits. On the other hand, motor coordination and balance aspects are needed to ensure synchronous body movements during a smash. This is in line with the theory of physical training which states that technical skills such as smashing require mastery of physical fundamentals and consistent repetition of training (Bompa & Haff, 2009 inSujarwo et al., 2023).

Psychological aspects are also integral to the success of a smash. Athletes who have high self-confidence, concentration, and the ability to manage pressure tend to be more successful in performing effective smashes. A strong mentality allows athletes to remain calm in critical situations, such as facing double blocks or scoring pressure. According to Weinberg and Gould (2014) in(Is & Adi, 2023), mastery of certain techniques such as smashing can be improved through visualization exercises, where athletes imagine the movements they will perform to strengthen the connection between mind and body.

This theoretical study emphasizes the importance of a holistic approach in smash training, which not only focuses on technical aspects, but also includes the physical and mental development of athletes. By understanding this theoretical basis, coaches can design training programs that suit the needs of individuals and teams. This is a strong basis for evaluating the level of smash skills in male athletes of the Volleyball UKM of Bina Bangsa University Getsempena Banda Aceh, as well as providing strategic recommendations for developing their abilities.

METHODS

This study uses a quantitative descriptive method to analyze the level of smash skills in male athletes of the Volleyball UKM, Bina Bangsa Getsempena University, Banda Aceh.(Arikunto, 2012). The population of the study was all male athletes of the UKM, with a sample of 12 athletes selected purposively based on their activeness in training and competition. The research instrument included a smash skill test that measured the speed of the shot using a radar gun, the accuracy of the ball direction with target marking, and the height of the jump using a digital measuring device. The data collected were analyzed descriptively using averages and percentages to describe the level of athlete skills.

RESULTS AND DISCUSSION

This study measures the level of smash skills in 12 male athletes of Volleyball UKM Bina Bangsa University Getsempena Banda Aceh. The aspects measured include hitting speed, ball direction accuracy, and jump height. The following are the raw data from the measurement results:

Table 1. of Measurement Results for Smash Skills of Volleyball Athletes in UKM Bina Bangsa Getsempena University

No	Punch Speed (m/s)	Ball Direction Accuracy (%)	Jump Height (cm)
1	18.5	85	65
2	19.0	80	68
3	17.8	75	62
4	20.2	90	70
5	18.0	78	66
6	19.5	88	72
7	18.7	82	67
8	16.5	70	60
9	17.0	72	63
10	20.0	85	69
11	18.2	77	65
12	19.8	88	71

The average results obtained from this study provide an overview of the level of smash skills in male athletes of UKM Volleyball, Bina Bangsa University Getsempena Banda Aceh. The average speed of the athlete's stroke is 18.60 m/s, which shows that most athletes have quite good stroke ability, although there is still variation in terms of stroke strength. The optimal stroke speed in a smash can affect the effectiveness of an attack, because the higher

the speed, the greater the possibility of the ball to penetrate the opponent's defense.

Meanwhile, the average accuracy of the athlete's ball direction was 80.83%, indicating that athletes are generally quite capable of directing the ball with good precision. Accuracy is one of the important aspects in a smash because even though the hit has high power, without proper accuracy, the ball can be more easily blocked or missed the target. In this case, most athletes are in the good accuracy category, although there is still room for improvement to reach a higher level.

The average jump height of the athletes was 66.5 cm, which illustrates the athlete's ability to jump to do a smash. A good jump height allows athletes to attack the ball from a more advantageous angle and avoid the opponent's block. Although most athletes are in the good jump height range, optimal achievement in this regard also requires increased leg muscle strength and more efficient jumping technique. Overall, these data indicate that athletes have solid smash skills, although there is still potential to improve speed, accuracy, and jump height to achieve maximum performance.

Ball Direction Accuracy

Table 2. Ball Direction Accuracy

Category	Range (%)	Frequency	Percentage (%)
Very good	≥ 85%	5	41.7
Good	75–84%	4	33.3
Enough	65–74%	3	25
Not enough	< 65%	0	0

The results of the accuracy of the ball direction showed that 41.7% of athletes were in the "Very Good" category (≥ 85%), 33.3% in the "Good" category (75-84%), and 25% in the "Fair" category (65-74%). There were no athletes in the "Poor" category (< 65%). This shows that the majority of athletes have quite good accuracy abilities.

Jump Height

Table 3. Jump Height

Category	Range (cm)	Frequency	Percentage (%)
Very good	≥ 70 cm	4	33.3
Good	65–69 cm	5	41.7
Enough	60–64 cm	3	25
Not enough	< 60 cm	0	0

The results of the jump height showed that 33.3% of athletes were in the "Very Good" category (≥ 70 cm), 41.7% in the "Good" category (65-69 cm), and 25% in the "Fair" category (60-64 cm). No athletes were in the "Poor" category (< 60 cm), indicating generally quite good jumping ability.

Research Discussion

The discussion of this study shows quite encouraging results related to the smash skills of male athletes of UKM Volleyball Universitas Bina Bangsa Getsempena. Based on the data obtained, 41.7% of athletes achieved the Very Good category in ball direction accuracy (≥ 85%), which shows their ability to direct the ball with high precision. This is important because good accuracy makes the ball more difficult to block or anticipate by the opponent. As many as 33.3% of athletes are in the Good category with a punch speed of 18.0–19.4 m/s, indicating that the majority of athletes are able to produce punches that are strong enough and effective enough to penetrate the opponent's defense.

In terms of jump height, the average athlete has a jump ability of 66.5 cm, with 33.3% of athletes in the Very Good category (≥ 70 cm). Optimal jump height supports the effectiveness of the smash, because the higher the jump, the more difficult it is for the opponent to block the hit. Overall, this study shows that the athletes' smash skills are quite solid. Although the majority of athletes are in the good category, there is still potential for improvement, especially in increasing the speed of the hit, accuracy, and jump height to achieve maximum performance in competition.

CONCLUSION

Based on the results of the study on the level of smash skills in male athletes of the Volleyball UKM of Bina Bangsa University Getsempena Banda Aceh, it can be concluded that most athletes showed good smash skills. The average speed of the athlete's strokes was in the Good category (18.0–19.4 m/s), with 50% of athletes reaching this category. For ball direction accuracy, 41.7% of athletes were in the Very Good category (≥ 85%), which showed good precision ability in directing the ball. The height of the athlete's jump was also quite adequate, with 33.3% of athletes reaching the Very Good category (≥ 70 cm), which supported the effectiveness of their smashes.

REFERENCES

Arikunto, S. (2012). *Research procedures: a practical approach / Suharsimi Arikunto | OPAC National Library of Indonesia*. In Jakarta: Rineka Cipta.

Budak, G., Kara, İ., & İç, Y.T. (2017). Weighting the Positions and Skills of Volleyball Sport by Using AHP: A real life application. *IOSR Journal of Sports and Physical Education, 4*(01). https://doi.org/10.9790/6737-0401012329

Duhe, EDP (2020). Physical Exercise For Power And Endurance Volleyball Sport. *Jambura Journal of Sports Coaching, 2*(1). https://doi.org/10.37311/jjsc.v2i1.5943

Is, Z., & Adi, R. (2023). The Effect Of Plyometric Training On Leg Muscle Strength In Volleyball Players Fostered By Dispora, Banda Aceh City. *Sport Pedagogy Journal, 12*(1). https://doi.org/10.24815/spj.v12i1.31274

Knobloch, K., Rossner, D., Gössling, T., Richter, M., & Krettek, C. (2004). Volleyball sport school injuries. *Sportverletzung-Sportschaden, 18*(4). https://doi.org/10.1055/s-2004-813481

Nugroho, RA, Yuliandra, R., Gumantan, A., & Mahfud, I. (2021). The Effect of Leg Press and Squat Thrust Training on Increasing Leg Power in Volleyball Athletes. *Sports Window, 6*(2). https://doi.org/10.26877/jo.v6i2.7391

Sahabuddin, S., Herman, H., & Windiana, N. (2023). Management of Volleyball Extracurricular Sports Coaching at High School. *Indonesian Journal of Sport Management, 3*(1). https://doi.org/10.31949/ijsm.v3i1.4168

Sarwita, T., & Is, Z. (2021). The Role of Competitive Mentality to Achieve Achievement in Weightlifting Athletes in Facing Pra Pora 2021. *Almufi Journal of Community Service, 1*(2).

Sujarwo, S., Santoso, N., & Alim, AM (2023). Volleyball Sports Management Training for Coaches in Sleman Regency. *Journal of Community Sports Service (JPOM), 4*(1). https://doi.org/10.26877/jpom.v4i1.14026

Wang, H. (2023). Prevention Of Sports Injuries During Physical Training Of Volleyball Players. *Revista Brasileira de Medicina Do Esporte, 29*. https://doi.org/10.1590/1517-8692202329012022_0801