Analysis of Overhand Serve Ability in Volleyball Game Among Female Players of BKMF Volleyball FIK UNM

Suriah Hanafi[1ABC]*, Silatul Rahmi[2BD]
[1,2] Faculty of Sports Science, Makassar State University, Makassar, Indonesia
*Coresponding Author: suriah.hanafi@unm.ac.id

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ABSTRACT

This research is descriptive research which aims to determine the top serving ability of female BKMF Volleyball FIK UNM players. The population in this study was all 20 BKMF Volleyball FIK UNM female players. Meanwhile, the sample in this study was 20 players selected by total sampling. Data collection techniques were obtained through testing and measuring volleyball service data. The data analysis techniques used are percentage and analysis. The research data obtained data on the percentage of service ability of 20 players or (100%), the very good category was 2 players or (10.0%), the good category was 5 players or (25.0%), the medium category was 11 players or (55.0%), the less than 2 players or (10.0%), and the very less than 0 players or (0%). Thus, it can be concluded that the percentage of final data results on top service ability results in volleyball games for female BKMF Volleyball FIK UNM players is in the Medium category with a percentage of 50.0%.

INTRODUCTION

Sport is a form of physical activity that has developed over time, not only as a form of recreation but also as a means of achieving achievement. In the modern world, sport has become an important part of people's lives, both as a fitness activity and in a competitive context. One of the sports that is growing rapidly and is in demand by various groups in Indonesia is volleyball. This game is not only popular in schools and communities, but is also part of professional competitions held nationally and internationally. The basic techniques that must be mastered in this game include serving, passing, smashing and blocking (FIVB, 2021). Success in volleyball is largely determined by mastery of basic techniques, one of which is the top serve technique, which acts as the initial attack in a match.

Volleyball is a team sport that requires good coordination, strategy and individual skills. One of the basic techniques that has a strategic role in a match is serving. The serve is not only used as an opening stroke to start the game, but can also be used as the main weapon to put pressure on

the opponent. The top serve, in this case, is a technique that has a higher level of difficulty compared to the bottom serve, because it requires punching strength, movement coordination and good accuracy. Athletes who are able to serve well can provide an advantage for their team, especially in scoring direct points or making it difficult for opponents to develop attack strategies.

According to Ahmadi (2007), the top serve technique in volleyball consists of several types, including the floating serve (floating serve), jump serve (jump serve), and topspin serve (spinning serve). Floating serve is a service technique that results in the ball flying without spin making it difficult for the opponent to predict. Jump service is done with additional shaking movements, resulting in a harder and faster shot. Meanwhile, the topspin service produces a ball that has a forward spin, which can speed up the ball's speed after passing the net. Of these three types of serve, floating serve and jump serve are often used in competitive matches, because they can create pressure on the opposing team.

The serve in volleyball has several strategic functions, namely as an initial shot of the game, a tool to disrupt the opponent's formation, and as a direct effort to score points (Hernandez, 2018). The top serve is considered more effective in putting pressure on the opponent than the bottom serve because it produces a faster ball and it is difficult to predict the direction of its fall (Morales et al., 2020). According to recent research, athletes who master the top serve technique well tend to have a greater opportunity to create attacks that are profitable for the driver (Vargas et al., 2019). Therefore, mastering good top serve techniques is an important aspect in developing volleyball athletes, especially at the competition level.

There are still a large number of players who still use the bottom serve more often than the top serve. This shows that there are no limitations in mastering effective top serve techniques. In official matches, good top serving ability can give an advantage to the team, because a strong and directed serve can make it difficult for the opponent to return the ball. In volleyball, an effective top serve can put pressure on opponents, thereby helping them in developing attack strategies (García-de-Alcaraz et al., 2021). Therefore, this study aims to analyze the top serving ability of BKMF Volleyball players and identify the factors that influence their performance in performing this technique.

The success of the top serve in volleyball is influenced by several main factors, including arm and shoulder muscle strength, eye and hand coordination, body posture, and the technical strategy used (Silva et al., 2018). Athletes who have good arm muscle strength can serve harder and more purposefully, while good eye and hand coordination will help athletes determine the correct hitting position on the ball. Apart from that, body posture and balance also play a role in producing a more stable shot. Apart from physical factors, the frequency of practice and the method of learning service techniques also have a significant influence on an athlete's ability to perform top serves more effectively.

Previous research results show that structured intensive training can increase the accuracy and strength of upper serves in volleyball athletes (Vierra & Fergusson, 2004). Players who regularly practice the top serve with the correct method have better ball control and are able to adapt their technique to match conditions. Research by Pranatahadi (2009) also shows that regular practice of basic serving techniques can increase the effectiveness of team attacks in matches. Therefore, coaches need to apply more systematic training methods in developing athletes' service abilities, including increasing training duration and regular evaluation of athletes' skill development.

Apart from technical factors, the athlete's psychological and mental condition also plays a role in the success of the top serve. According to Moleong (2007), psychological factors such as self-confidence and concentration can influence the effectiveness of a top serve. Athletes who have high self-confidence tend to be able to serve more stably and accurately. On the other hand, athletes who experience mental pressure or lack self-confidence often fail to serve optimally. Therefore, in training programs, coaches also need to provide a psychological approach to improve the athlete's competitive mentality and focus.

MATERIALS AND METHODS

The research method used in this research is descriptive with data collection techniques carried out through tests and measurements. Population is all the things that will be studied, whether in the form of objects or inanimate objects or in the form of subjects or humans or social devices available in a study (Rahmadani et al., 2023).. The population in this study was all male students of BKMF volleyball FIK UNM, totaling 20 people. Sample is any method used to identify samples for research purposes (Purba et al., 2023). Based on the opinion above, what is meant by sample is a portion or representative of the population studied and the data obtained represents the population. So the sample in this study was 20 female BKMF volleyball students from FIK UNM. The sampling in this research is total sampling (the whole sample), for example, if we look at the population following the above, namely 20 people, then we take a sample of 20 people, if we use the total sampling technique, we take the whole sample. After all the research data was collected, namely the ability to serve volleyball, to test the hypothesis proposed in this research, the data analysis techniques used were percentages and computer-assisted analysis using the SPSS version 25 program.

RESULTS AND DISCUSSION

Result

Descriptive data analysis is intended to get a general picture of the research data. Analysis of top serving ability in volleyball among female BKMF Volleyball FIK UNM players. From these statistical values, it is hoped that it can provide a general idea about the analysis of top serving abilities in volleyball games for female BKMF Volleyball FIK UNM players. The results of the descriptive analysis of each research variable can be seen in the following table:

Table 1. Analysis Results Analysis of upper serve ability in volleyball games for female BKMF Volleyball FIK UNM players.

	N	Mean	Stdv	Variance	Range	Min.	Max.
Top service capability	20	15,00	2,26181	5,116	8,00	13,00	21,00

The results from the table above which is an illustration of the results of top serving ability can be stated, namely for data on the results of top serving ability in volleyball games for BKMF Volleyball FIK UNM players. From 20 samples, the average value obtained was 15.00 with a standard deviation of 2. .26181 and a variance value of 5.116 from a data range of 8.00 between the minimum value of 13.00 and 21.00 for the maximum value.

Table 2. Recapitulation of the percentage of data on top serving ability results in volleyball games for female BKMF Volleyball FIK UNM players.

No.	Interval	Frequence	Percentage	Clasification
1	20 > X	2	10,0%	Very Good
2	18 < X < 19	5	25,0%	Good
3	15 < X < 17	11	55,0%	Medium
4	13 < X < 14	2	10,0%	Less
5	X < 12	0	0%	Very Less
	Total	**20**	100%	-

Based on the table above, it appears that the percentage of top service ability data results in volleyball games for BKMF Volleyball FIK UNM female players out of 20 athletes or (100%), 2 players in the very good category or (10.0%), good category as many as 5 players or (25.0%), the medium category as many as 11 players or (55.0%), the less than category as many as 2 players or (10.0%), and the very poor category as many as 0 players or (0%). Thus, it can be concluded that the percentage of final data results on top service ability in volleyball games for BKMF Volleyball FIK UNM female players is in the Medium category with a percentage of 50.0%. The diagram of the upper serviceability seen from graphite is as follows:
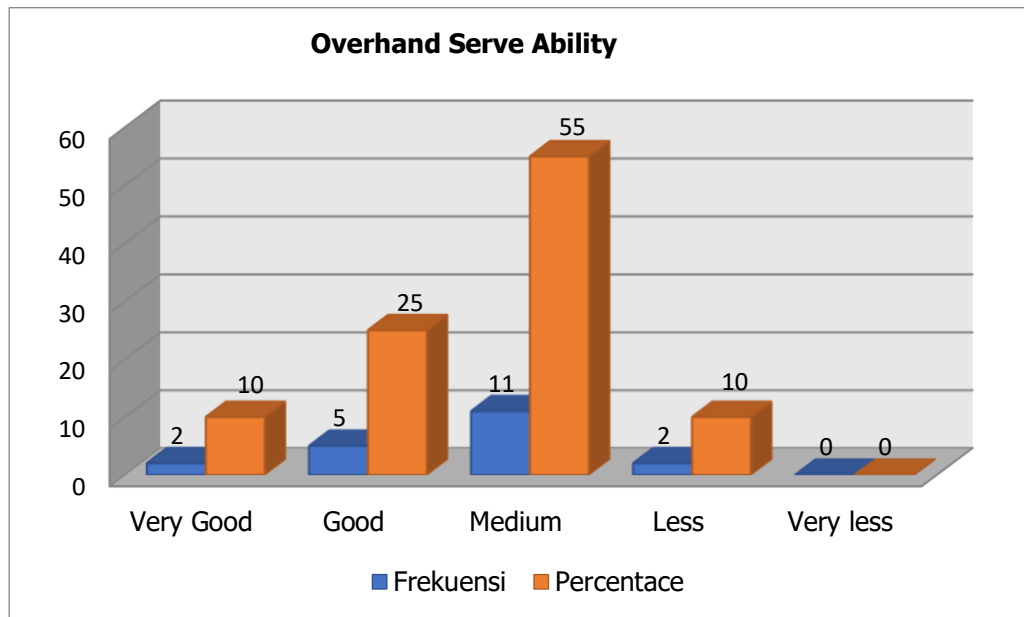
Figure 1. Diagram of the results of top serving ability in volleyball for female BKMF Volleyball FIK UNM players

Discussion

Based on the research results, the majority of BKMF Makassar Volleyball female athletes have top service abilities in the medium category (55%), while only a small percentage of players fall into the good (25%) and very good (10%) categories. These findings indicate that mastery of top serve techniques is still not optimal and needs to be improved through more specific and systematic training. Apart from that, there are still 10% of athletes who fall into the poor category, which shows that some athletes still face obstacles in mastering the top serve technique effectively. Therefore, further analysis is needed regarding the factors that influence top service skills as well as strategies that can be implemented to improve the quality of this technique.

One of the main factors that influences top serve ability is mastery of basic techniques. According to FIVB (2021), a good top serve technique must be supported by a stable body position, hand and eye coordination, and optimal arm movement. In this study, some athletes still experienced difficulty in maintaining balance when performing a top serve, which had an impact on the accuracy of their shots. Athletes who are in the poor to very poor category tend to have technical errors in body position when serving, such as unbalanced posture or errors in hand swing when hitting the ball. This is in line with research by García-de-Alcaraz et al. (2021) which states that errors in basic technique can reduce the effectiveness of the serve and make it easier for the opponent to anticipate the direction of the ball.

Apart from basic technique, another factor that plays a role in the success of a top serve is arm and shoulder muscle strength. The top serve requires a strong enough hitting power to ensure the ball can pass through the net with good speed and accuracy. Bompa & Buzzichelli (2018) explained that the strength of the arm and shoulder muscles greatly influences the results of the serve, where athletes who have stronger arm muscles tend to be able to produce serves that are sharper and difficult for the opponent to return. In this study, athletes in the good and very good categories generally had stronger and more

accurate shots, while athletes in the poor category often failed to cross the net or were unable to direct the ball well into the opponent's area. Therefore, coaches need to provide arm and shoulder muscle strengthening exercises so that athletes can increase their punching power when performing top serves.

Practice frequency is also an important factor in improving top serve skills. The results of interviews with coaches show that upper serve training has not become the main focus in the daily training program, so that some athletes still have limitations in this technique. According to Palao et al. (2017), exercises carried out repeatedly and systematically can increase the effectiveness of the top serve. Athletes who practice the upper serve regularly have a higher success rate than athletes who only practice this technique occasionally. Therefore, adjustments are needed in the training program by increasing the portion of upper serve training, both in individual and group training sessions.

Apart from technical and physical factors, psychological aspects also play a role in the success of the top serve. González-Silva et al. (2020) stated that athletes who have high self-confidence tend to be more stable in executing top serves, while athletes who lack confidence often fail to control their shots. Several athletes in the poor and very poor categories in this study reported that they often experienced mental stress when serving, especially in match situations. This shows that psychological training is also needed to improve athletes' performance in performing top serves. Coaches can implement mental coaching strategies, such as visualization exercises and match simulations, to help athletes manage pressure and increase their confidence in serving.

Based on the findings of this research, several strategies can be applied to improve the top serving ability of female athletes playing BKMF Volleyball FIK UNM. First, increase the intensity of upper serve training by adding special sessions to the daily training program. This training can include drills on hitting technique, ball accuracy, and strengthening arm and shoulder muscles to improve serve speed and accuracy. Second, evaluation of individual technique using video recordings can be carried out to help athletes identify technical errors that still occur and correct them. This technique has been proven effective in improving athletes' skills in various sports (Lopez-Fernandez et al., 2021). Third, mental training and match simulations can be applied to increase athletes' confidence when performing top serves in real match situations. By implementing this approach, it is hoped that athletes can perform the top serve better and more stably.

The implications of this research indicate that top service abilities can still be improved through more structured and focused training methods. With 55% of players in the moderate category, this shows that there is still room for improving technique through more specific and intensive training. These findings can also be used as evaluation material for trainers in developing more effective training programs. Therefore, coaches or coaches are expected to focus more on developing top serve techniques, both in individual and group training. Apart from that, clubs also need to ensure the availability of supporting training facilities, such as special training targets for top serves and standard balls that are suitable for official competitions, so that athletes can improve the accuracy and consistency of their shots. With improvements in training methods and a better psychological approach, it is hoped that BKMF Volleyball FIK UNM female players can master top serve techniques more effectively and improve their performance in official matches. Implementing a more comprehensive strategy in developing top serve techniques will not only improve individual athletes' skills but also have a positive impact on overall team performance.

CONCLUSION

Based on the results of the research and discussion presented above, a conclusion was drawn, namely the results of the top serving ability in volleyball games for female BKMF Volleyball FIK UNM players from 20 athletes or (100%), the very good category of 2 players or (10.0%), the good category has 5 players or (25.0%), the medium category has 11 players or (55.0%), the poor category has 2 players or (10.0%), and the very poor category has 0 players or (0%). Thus, it can be concluded that the percentage of final data results on top service ability results in volleyball games for female BKMF Volleyball FIK UNM players is in the Medium category with a percentage of 50.0%. Several strategies can be applied to improve upper serve ability, including increasing training intensity, carrying out arm and shoulder muscle strengthening exercises, implementing technique evaluation via video recording, and providing mental training to increase athletes' confidence in performing upper serves.

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