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The Contribution of Right and Left Smash Training to Smash Accuracy in Badminton UKM of the University of Muhammadiyah Kuningan

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ABSTRACT
This study aims to determine the contribution of right and left smash practice to the accuracy of smash in badminton games in members of the Badminton Student Activity Unit (UKM) of the University of Muhammadiyah Kuningan. The right and left smash exercise is a training method that involves dynamic movements from both sides of the body to improve coordination, speed, and punch accuracy. The research method used was a quantitative experiment with a one group pretest-posttest design. The sample in this study is 10 members of Badminton UKM who were randomly taken. Treatment in the form of right and left smash exercises is given for 4 weeks, with a frequency of training 3 times a week. The instrument used was a smash accuracy test which was compiled based on PBSI standards. The results of the data analysis showed an increase in the average score from the pre-test by 22 to 35.6 in the post-test. The hypothesis test using a paired sample t-test yielded a significance value of 0.000 ($p < 0.05$), which means that there is a significant effect between right and left smash exercises on smash accuracy. Thus, it can be concluded that the right and left smash practice makes a positive contribution to improving the accuracy of smash in badminton players.
Keywords: Badminton*, Right Left Smash, Smash Accuracy, Training, UKM*
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INTRODUCTION

Education is an awareness that affects the environment and the learning process because it is through education that students can actively develop their potential in the form of spiritual strength, self-control, noble morals, intelligence, noble morals, and the skills needed by themselves and the community. Education functions as a means for children in the process of growing and developing into adults as well as a provision for future life. Education can occur at different levels, such as formal education, which is usually provided in schools or colleges, and informal learning, which can occur through daily experiences, social interactions, or independent learning. The educational component that emphasizes sports, physical activity, and a healthy lifestyle for the physical development and growth of students is physical education. Physical education, especially for students, must be of high quality, and this is achieved through the use of sport in the classroom and in the field for teaching and learning. In addition, values such as leadership, discipline, teamwork, and sportsmanship are developed

through physical education. Students are expected to learn the values of maintaining fitness and physical health, improving motor skills, and living a healthy lifestyle through physical education (Akbar, Hidasari, and Haetami 2020).

Exercise is a physical activity that functions to maintain health and increase the strength of the body's muscles. Apart from being a form of maintaining fitness, sports can also be a means of entertainment, recreation, and even an event to achieve achievements. One of the most popular sports, both in Indonesia and in the world, is badminton. In Indonesia, badminton has become a sport that is in great demand and has many fans. The achievements of Indonesian badminton athletes have also received international recognition and are able to compete with athletes from various countries. To maintain and improve this achievement, athletes and coaches need to develop and run training programs that are in accordance with the current development of sports. As a popular sport, badminton requires continuous and gradual training so that athletes can achieve their best performance. Exercises that are done in a structured manner with the guidance of an experienced coach and support team will help athletes improve their skills. (Kamal, 2022).

According to Priambudi & Syaukani (2022) Badminton in Indonesia has become one of the most popular sports among the public, thanks to its achievements and ability to compete at the world level. As a consequence of these achievements, every player is expected to continue to achieve brilliant results. Therefore, both players and coaches are required to implement a training program that is scientifically based and in accordance with the development of modern sports. Coaching in sports cannot be done instantly, but requires consistent effort and hard work. Badminton can be played on either a closed or open court, with a flat surface made of concrete, wood, or carpet, and marked with a line as the boundary of the court and delimited by *England Championship***"**, was first held informally in England in 1899. (Adam et al., 2022)

Badminton is one of the sports that is very popular with many people. To achieve success and become an accomplished athlete, it takes training that is done consistently and continuously. This exercise not only aims to hone technical skills and physical abilities, but also to strengthen the athlete's mentality so that they can compete optimally in various matches. In addition, in the training process, the role of the coach is very important. An experienced coach will provide the right guidance, assist athletes in improving game technique, improving physical fitness, and designing effective game strategies. With this guidance, athletes can be better prepared to face opponents with confidence, improve their ability to compete, and appear more agile in every match. This systematic and targeted training is the main key for athletes in

achieving the desired achievements. In Indonesia, efforts to achieve high achievements in badminton are supported by the existence of various Badminton Associations (PB) spread across each region. This association has an important role in fostering and developing young athletes through intensive and systematic training programs. Through PB, athletes get the opportunity to train professionally, improve their skills, and prepare themselves to compete in various national and international events (Septiyani and Apriani, 2023).

The game of badminton or commonly known as badminton has become a popular sport and has become a subject in the educational curriculum and is included in the category of small ball games. Students can express their interest and skills in badminton by playing this game during extracurricular activities at school. One player against one player (singles) or two players against two (doubles) players facing each other are two ways badminton is played. The game uses a rectangular court with a net in the middle to separate its own playing area from the opponent's playing area. The game is played with a batting stick called a racket, and a shuttlecock as the object to be hit. The goal of the game of badminton is to use a racket to hit the shuttlecock and try to drop it into the opponent's area of play while preventing the opponent from dropping it into their own area (Pokhrel, 2024).

Exercise comes from the word practice, and is an activity that aims to improve training ability by making full use of various equipment according to the purpose and needs of the sport. Competitions are the culmination of the athletes' training process with the hope that the athletes can show their best. The main goal of training is to increase the functional and biomotor capacity of athletes at the highest possible level, so athletes cannot be separated from the training process to achieve optimal performance, training is a process that is carried out systematically and repeatedly with progressive loads. Furthermore, training is an effort to prepare athletes to achieve certain goals (Ahmad, 2020)

In the game of badminton, there are several basic techniques that must be mastered by players, namely: Racket holding technique (grip), Foot movement (footwork), Basic punching technique. In addition, players also need to master various types of shots in badminton, including: Service shot, Lob shot (clear), Dropshot shot, Smash shot, Drive shot, and Net shot (netting). In addition to mastering basic techniques, body flexibility is also an important factor in the game of badminton. Good flexibility will help players in performing complex movements and mastering difficult techniques more effectively (Agus Raharjo et al., 2024).

Basic techniques are the main key in a game and require a good enough mastery to make the game exciting and increasingly like smash is one of the crucial punching methods that badminton players must learn, as it allows both singles and doubles players to accumulate

points during the match. Smash in badminton is an attacking overhead punch that intends to crush the opponent's defense as well as get points done by hitting the shuttlecock sharply and strongly that leads to the opponent's court area. The smash punch is decisive in getting points so doing smash technique well is an obligation of an athlete in a badminton match, because if the basic smash technique is not mastered well, it will be difficult to win. In addition to hard and sharp punches, smash punches must also have good accuracy so that the ball is difficult for the opponent to receive (Zakir Burhan, 2023).

Smash punches in badminton are one of the techniques that require a high level of precision and accuracy. The main purpose of this punch is to control the movement when hitting the shuttlecock so that it can direct it to the target point with optimal speed and force. Accuracy in smashing is very important, as it can determine the effectiveness of attacks against opponents. With the right punch, the shuttlecock can be delivered to areas that are difficult for opponents to reach, thus increasing the chances of scoring points. In addition, the need to practice the right-left smash pattern involves the use of a number of shuttlecocks that are thrown alternately to the right and left sides of the playing field. This technique aims to increase the speed, accuracy, and agility of players in smashing from various angles. (Febiasnyah et al., 2024)

The potential that each athlete has must be maximized properly, so the development of physical and technical conditions of the match must be optimal so that athletes are required to routinely practice. Exercise is an effort to improve our general physical condition with the aim of achieving better mobility. It is a methodical and repetitive procedure that results in increased mobility due to the intensity of the exercise that matches the sport being played. Exercise is an effort to improve our general physical condition with the aim of achieving better mobility. The paraphrasing can go something like this. To achieve achievements, athletes must undergo training. Practice plays an important role in helping athletes improve and master physical, tactical, mental, and various hitting techniques in badminton. Training itself is a sports activity designed in a structured and regular program, aiming to improve the ability of athletes in preparation for the match. In the training process, the coach has a crucial role in putting together an effective program. The main task of coaches is to prepare athletes well so that they can achieve maximum achievements in competitions. To achieve this, coaches need to develop programs that focus on developing techniques, skills, strategies, physical condition, endurance (Setyawati et al., 2022).

There are several factors that affect the achievement of a badminton player is influenced by several factors, including facilities and infrastructure. Coaching methods, as well as the

suitability between talent and potential athletes. To achieve optimal achievements, support is needed from various aspects, such as tactical readiness, mental, physical, technical, and champion mentality. The physical readiness required includes arm muscle strength, endurance, flexibility, speed, and agility. However, the decline in athletes' achievements is currently influenced by several factors, such as less effective training methods, poorly planned exercises, or incorrect training movements. If the training method is not effective and does not meet expectations, the athlete's game becomes less than optimal, for example in terms of placement *shuttlecock* inaccurate and other technical issues. (Ermanda & Nasution, 2022)

Putra et al., (2021) in his research it was said that the precision (*Accuracy*) is a person's ability to direct movement towards the goal according to the desired goal. In other words, accuracy is the alignment between expectations and results obtained against a certain target. This factor is very important for a person to achieve the goals that have been set. Accuracy is closely related to the ability of individuals to control and direct movements precisely towards a goal. According to Putra et al., (2021), precision (*accuracy*) also involves a person's ability to control free movement to be precise about the target, be it in the form of distance or objects that must be imposed by certain parts of the body. In PPITOR (1999), precision training is divided into two types, namely Precision of motion, which emphasizes the correctness of the technique in performing movements, and Accuracy of Results, which focuses on the accuracy of achieving the desired target. This precision is indispensable in smashing a badminton game.

Based on the results of observations and observations of researchers in the field, the problem is that many participants of the badminton Ukm of the University of Muhammadiyah Kuningan experience obstacles in doing badminton smashing, especially in the accuracy of the smash. This is due to the absence of smash technique debriefing, lack of time to practice extracurricular activities and training focused more on physical and game. Based on the description above, in this case the author will conduct research with the aim of correcting the problem with a research entitled The Contribution of Right and Left Smash Training to Smash Accuracy in Badminton UKM of the University of Muhammadiyah Kuningan.

METHOD

This study uses a quantitative approach with a quasi-experimental method and *a one group pretest-posttest* design. This study aims to determine the effect of right and left smash training on smash accuracy in Badminton UKM athletes at the University of Muhammadiyah

Kuningan. This design allows for the measurement of initial ability (pretest), treatment (treatment), and remeasurement after treatment (posttest).

The population in this study is all active members of the Badminton UKM of the University of Muhammadiyah Kuningan as many as 22 people. The sample was randomly selected (random sampling) of 10 people, who met the criteria of active involvement in routine exercise and did not suffer physical injuries during the study.

The study was carried out for 4 weeks with a frequency of exercise three times per week. Each training session lasts 60 minutes, consisting of 15 minutes of warm-up, 30 minutes of right-left smash exercises, and 15 minutes of cool-down. The instrument used to measure the accuracy of the smash refers to the test standard of the Indonesian Badminton Association (PBSI), where participants perform 10 smashes directed at a specific target and each success is recorded as a score.

Data is collected through:

- **Pretest**, to measure the participant's initial ability to perform accurate smashes.
- **Treatment**, in the form of structured right-left smash exercises.
- **Posttest**, to measure the improvement in smash accuracy after being given a treatment.

The main instrument is the badminton smash accuracy test. The assessment is carried out based on the number of shuttlecocks that are successfully directed to the target zone. The validity of the instrument is determined based on logical validity, while reliability is tested using *the test-retest* technique.

Data were analyzed using descriptive and inferential statistical tests. The normality test was performed using Shapiro-Wilk, and the homogeneity test was performed using the Levene's Test. To test the hypothesis, *a paired sample t-test* with a significance level of 5% ($p < 0.05$) was used, using IBM SPSS software version 26.

RESULTS AND DISCUSSION

Result

Table 1. Results of *Pre-test* and *Post-test Data Analysis*

Yes	Player Name	Pre-test	Post-test
1	Agatsya	24	38
2	Satya	19	35
3	Lutfi	23	35
4	Gibran	22	34
5	Obi	21	36
6	Daffa	24	34
7	Husni	22	36
8	Septian	25	35
9	Aorta	21	36
10	Faris	19	37
	TOTAL	**220**	**356**
	AVERAGE	**22**	**35,6**

Based on Table 4.1 entitled Results of Pre-test and Post-test Data Analysis, data was obtained on the results of the smash accuracy test from ten participants of the Badminton UKM of the University of Muhammadiyah Kuningan before and after being given treatment in the form of right and left smash contribution exercises. This table includes the pre-test and post-test values used to measure the effect of exercise on participants' improved smash accuracy. This value indicates that the participant's initial ability to smash

In the pre-test results, the total score obtained was 220 with an average of 22. accurately it is still relatively low before being given training. The highest pre-test score was 25 (by Septian), while the lowest score was 19 by Satya and Farfis. In general, the pre-test score shows that most of the participants have not mastered the smash technique consistently from both the right and left sides.

After being treated in the form of right-left smash contribution exercises for a certain period, a post-test was carried out to measure the progress of the participants' smash accuracy. The results showed a significant improvement, with a total score of 356 and an average of 35.6. The highest post-test score was achieved by Agatsya with a score of 38, while the lowest score

remained relatively high at 34 (by Gibran and Daffa). All participants showed an increase in scores compared to their respective pre-tests.

The average increase of 13.6 points from pre-test to post-test reflects the positive effect of the right and left smash contribution exercise on smash accuracy. This shows that a variety of exercises involving both sides of the body can improve the player's ability to direct and control the smash more effectively and accurately.

These findings are in line with the principle of bilateral training in sport, where exercises using both sides of the body can improve coordination, strength, and stability of punching techniques. Therefore, it can be concluded that the right and left smash contribution exercises applied in this study have proven to be effective in increasing the accuracy of smash participants of Badminton UKM at the University of Muhammadiyah Kuningan.

Table 2. Descriptive Pre-test and Post-Test Statistics

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Hours of deviation
pretest	10	19	25	22.00	2.055
posttest	10	34	38	35.60	1.265
Valid N (listwise)	10				

1. Normality Test

The normality test in this study uses *the Shapiro-wilk* test, assuming a small sample group or less than 30, this is done to find out the normally distributed data if *the value of sig* or *p,* value > 0.05, then the data is declared normal. Meanwhile, if the *sig* or *p,value* < 0.05, the data is declared abnormal.

Table 3. Normality Test Results

	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistic	df	Say.	Statistic	df	Say.
Pree-Test	.135	10	.200*	.940	10	.550
Post-Test	.182	10	.200*	.930	10	.445

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

The pretest normality test produces a significant value of 0.550 because 0.550 is greater than 0.05, then the normality test of pretest data is normally distributed, while the posttest normality test produces a significant value of 0.445 because 0.445 is greater than 0.05, then the normality test of posttest data is also distributed normally. Thus both pretest and posttest data are distributed normally.

2. Homogeneity Test

The homogeneity test is used to determine the degree of similarity of variance between variables X and Y. To find out whether it is homogeneous or not, it is sig > 0.05, then it is homogeneous and if sig < 0.05, it can be said to be non-homogeneous. The following is a summary of the results of the homogeneity test processing which is processed using *pre-test* and *post-test* homogeneity tests, test of homogeneity of variences which can be seen in the following table:

Table 4. Homogeneity Test

Levene Statistic	df1	df2	Say.
1.929	1	18	.182

Based on the *output table* "*Test of Homogeneity of Variances*" above, it is known that *the significance value (sig)* variable resulting from the contribution of right and left smash exercises to badminton SME students is 0.182. Because the sig value of 0.182 is greater than 0.05, as the basis for decision-making in the homogeneity test above, it can be concluded that the variance of data from the results of the right and left smash exercises in badminton is homogeneous.

3. Uji Hypothesis

To answer the formulation of the problem proposed, the hypothesis test used is to use the *paired test of the T-test.* Data processing is carried out using SPSS IBM-20. The hypothesis test in this study is that there is an effect of right and left smash contribution exercises on badminton SME students. To find out whether there is a significant influence or not is if *the value of sig*. (2-tailed) > 0.05 then accepted and rejected. This means that there is no significant difference in influence. Then if $H_0 H_a sig$ (2-tailed) < 0.05 then it is rejected and accepted. This

means that there is a significant influence. The following are the results of the calculations obtained as follows:$H_0 H_a$

Table 5. Hypothesis Test

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Hours of deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pretest - postest	27.300	6.674	1.492	24.177	30.423	18.294	9	.000

Discussion

Based on the results of the hypothesis test shown in Table 4.5 regarding the Paired Sample Test, the mean difference between the pre-test and post-test results was 27,300 with a standard deviation value of 6,674 and a standard error of 1,492. This value shows that there is a considerable average difference between the participants' abilities before and after being treated in the form of right and left smash contribution exercises.

The results of the t-test showed that the t-value was calculated as 18.294 with a degree of freedom (df) of 19, and a significance value (Sig. 2-tailed) of 0.000. Because the significance value is less than 0.05 (0.000 < 0.05), it can be concluded that there is a significant difference between the pre-test and post-test results. In other words, the right and left smash contribution exercise has a real influence on improving the accuracy of smash participants of the Badminton UKM of the University of Muhammadiyah Kuningan.

In addition, in the Confidence Interval of the Difference column, a range of values between 24.177 to 30.423 is obtained, which means that the average increase in value lies within the interval at a confidence level of 95%. This reinforces the conclusion that the treatment given is effective in improving the performance of the participants, particularly in terms of smash accuracy.

Overall, the results of this analysis are in line with the research hypothesis that there is a significant influence of right and left smash contribution exercises on smash

accuracy. Exercises that involve the use of both sides of the body (right and left) help improve balance, punch control, and coordination of the player's movements, so that the accuracy of the smash can be improved overall. These findings also support motor learning theory and bilateral training principles that state that symmetrical training can improve movement efficiency and precision in sports such as badminton.

CONCLUSION

Based on the results of data processing and discussion of the contribution of right and left exercises to the accuracy of smash in badminton SMEs at the University of Muhammadiyah Kuningan, the author draws the following conclusions:

1. Based on the results of the analysis and processing *of pre-test data*, the lowest score was 19, the highest score was 25, and the average was obtained 22
2. Meanwhile, *the post-test data* obtained the lowest score of 34, the highest score of 37, and obtained an average score of 35.6. There is an increase in the accuracy of football shooting penalty kicks..
3. Based on the tests, it shows that both distribution tests are normal. Therefore, to test the hypothesis using *the paired samples test, the* pre-test *and* post-test *values* show the value of sig.(2-tailed) which is 0.000 < 0.05, then there is a significant difference. So H_0 is rejected and H_a is accepted.

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