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Badminton smashing punch training method Junior high school Athletes Eternal Badminton Association

I Bagus Endrawan[1], Noviria Sukmawati[2], Aprizal Fikri[1], Mitra Wardana[2]

[1]Department of Physical Education, Postgraduate Programme, Universitas Bina Darma, Palembang, Indonesia.
[2]Department of Sport Education, Faculty of Social and Humanities, Universitas Bina Darma, Palembang, Indonesia.
**Corresponding author: bagus.endrawan@binadarma.ac.id*

Abstract

Badminton is a sport that requires a high level of technical and strategic expertise. Correct positioning allows the player to have an optimal viewing angle of the game and makes it easy to respond to the movement of the shuttlecock. The purpose of this study was to evaluate the application of smash precision training methods on junior badminton players in the Eternal Badminton Union. This study adopts a quantitative approach by using experimental methods pretest-post-test design of one group. This experiment will be conducted for six weeks with a training frequency of four sessions per week. The population and subjects were junior athletes of the Eternal Badminton Union, which numbered 15 people, namely nine male athletes and six female athletes. The data analysis using SPSS statistical software 20. The research instrument used questionnaires, smash accuracy tests before and after training, and field observations to evaluate the effectiveness of smash precision training methods in junior badminton athletes. The results showed that the drill method can improve the accuracy of badminton strokes of junior athletes from the Badminton Association of PB Abadi. Further research can develop different training methods by combining different training methods. This will help to better identify the factors that can improve the smash badminton results of junior athletes.

Keywords: *exercise method; smash accuracy; badminton; junior age athletes*

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INTRODUCTION

Badminton has gained popularity as a sport that requires a high level of technical and strategic expertise (Cendra et al., 2019; Iqroni, 2022).The sport is played in singles or doubles, and each variation has its own set of rules that must be followed. Stroke technique in badminton involves a number of skills, including serve, lob or clear shot, drop shot, smash, drive or horizontal shot, and return or hit (Geli et al., 2022; Setiawan et al., 2022). Technical skill is not the only aspect of badminton that is emphasised. Correct posture, positioning and foot movement also play an important role as a foundation before the action begins on the court. Good posture can improve players' balance and stability on the court, giving them an advantage over their opponents (Chen & Zhu, 2022; Rachmalia & Lengkana, 2022).Correct positioning allows the player to have an optimal viewing angle of the game and makes it easier to respond to the movement of the shuttlecock. Agile and quick foot movements are essential to respond quickly to changing game conditions and to chase the shuttlecock effectively.

Sports coaching from an early age plays a crucial role in achieving maximum achievement (Carsiwan, 2016; Kamnuron et al., 2020).The four aspects of completeness that an athlete must have to achieve optimal performance involve physical development, technique,

mental, and champion maturity (Endrawan et al., 2023; Putri & Aliriad, 2023). Physical development involves structured exercises to improve strength, speed, endurance, and flexibility (Kresnapati et al., 2020, 2021). Furthermore, the development of techniques requires athletes to master special techniques in their sports through intensive training (Hasanah, 2016). Field observations found the problem faced by some athletes is the lack of proficiency in smash techniques. Some athletes may have difficulty transferring force from the legs to the arms, thereby reducing the effectiveness of the Smash hit. In addition, posture problems and suboptimal foot movements can also affect stability and accuracy in performing smash by combining the technical skills of badminton strokes and attention to aspects of posture, position, and foot movement, a player can develop a comprehensive advantage in the game. Therefore, coaching in badminton not only focuses on technical aspects, but also involves the development of physical and mental aspects, creating complete players and able to master various aspects of the game of badminton. The Urgency of this study lies in the effectiveness of precision smash training in improving the skills of junior badminton athletes. So that the integration of mental and strategic aspects in junior badminton training, is not focused on practicing techniques and physical skills alone but can create players who are more complete and able to face the challenges of competition holistically.

This study is different from previous research through an innovative and specific approach to the technique of smashing punch, especially for junior high school athletes (Hidayat, 2016; Winarno, 2019). Most previous studies have tended to pay attention to general techniques in badminton without focusing on these techniques specifically among young athletes (Cendra et al., 2019; Setiawan et al., 2022). This has led to gaps in the literature regarding effective training methods for this technique at the junior high school level. The innovative approach in this study involves the development of training strategies tailored to the needs and characteristics of Junior High athletes. In addition, the study also considered factors such as physical and mental development in adolescence that can affect the effectiveness of training. By focusing on the smashing punch technique among young athletes, this study makes an important contribution in filling the knowledge gap in badminton literature. This allows coaches and sports program developers to have more specific and targeted guidance in training junior high athletes in this important technique, thereby increasing their potential in badminton competitions at the youth level as well as higher in the future.

Smash attack techniques demand significant energy utilization of the legs, body flexibility, and systematically coordinated (Simatupang & Wismanadi, 2022; Wea & Samri,

2022). This punch requires a combination of strength and speed, with the main objective of turning off the opposing athlete's points (Mangun et al., 2017; Prayogo, 2023). Speed, strength, and sharpness of blows are the main characteristics of a smash attack, which makes it a powerful weapon in scoring points (Hardiansyah, 2018).

This blow is capable of adrenaline, creating psychological pressure on the opponent, who must always be ready and careful in predicting and responding to a smash attack. Therefore, in addition to involving physical and technical aspects, smash attacks also require high mental readiness and responsiveness from each athlete. This study aims to measure the extent of the influence of smash precision training on the improvement of the skills of junior badminton athletes in the Eternal Badminton Union. With a focus on the application of training methods and their effects, this study is expected to provide a deep insight into the effectiveness of Smash Precision Training and its contribution to the technical progress of junior badminton athletes in the Eternal Badminton Union. This research enriches the literature by providing a structured and tested training method for the smashing punch technique, which can significantly improve the abilities of young athletes. In addition, a focus on the junior level provides a competitive advantage because investing in badminton talent development from an early age has been shown to produce more qualified athletes in the future.

METHOD

The research method used is experimental with pretest-post-test design of one group (Darwin et al., 2021; Juniardi et al., 2016). The population of this study consisted of junior athletes Persatuan Badminton Abadi (PB Abadi), with the number of subjects as many as 15 athletes, consisting of 9 male athletes and 6 female athletes. The sampling technique applied is convenience sampling, where researchers select junior athletes who are available and willing to participate in the study. Research Data obtained through pretest and post-test instruments to measure the accuracy of the smash ability of junior badminton athletes. The data collection process was carried out over a period of 6 weeks, with a training frequency of 4 sessions per week. After the pretest, the treatment was carried out using the drill method, that is, throwing the shuttlecock directly into the net, for 16 practice sessions. Before performing the analysis, a preliminary test is carried out to ensure that the assumptions of parametric statistics are met. Thus, this study covers the entire research process from subject selection, data collection, treatment, to comprehensive data analysis.

RESULTS

Analysis of the data showed changes in the athletes' abilities after treatment, which could provide deep insights into the effectiveness of strategies or interventions applied to badminton practice. The data can be seen in the pre-test and post-test scores based on scores from 0-100 in Table 1 below:

Table 1. Results Of Pretest and Post-test

No	Athletes	Pret-Test	Post-Test
1	HP	70	97
2	II	65	96
3	IC	71	95
4	ISR	74	95
5	JS	70	96
6	MHAH	71	93
7	M	71	84
8	M	69	99
9	NCDP	69	91
10	RJ	70	98
11	RR	69	95
12	RM	70	95
13	RF	69	95
14	RF	65	99
15	RZF	70	99
	Total	1043	1427
	Average	29,80	40,77
	Deviation	2,16	3,69
	Maximum Value	74	99
	Minimum Value	65	84

Table 1. provides a comprehensive overview of the pre-test and post-test scores for badminton athletes from the Eternal Badminton Association. The data includes pre-test and post-test scores for a sample of 15 athletes. The pre-test score has a total of 1043, with a mean of 29.80 and a standard deviation of 2.16. The maximum pre-test score is 74, while the minimum is 65. On the other hand, the post-test score has a total of 1427, with an average of 40.77 and a standard deviation of 3.69. The maximum post-test score is 99 and the minimum is 84. These statistics indicate an increase in overall performance from pre-test to post-test, with variation between athletes. Table 2 above shows that the experimental class before treatment, obtained an average pre-test score of 29.80 with a standard deviation of 2.16 and after the drill method, obtained an average post-test score of 40.77 with a standard deviation of 3.69.

Tabel 2. Paired Sample Test One-Sample Test

	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Pretest	120.665	14	0.000	69.533	68.297	70.769
Pos-test	96.585	14	0.000	95.133	93.020	97.245

The results of the one-sample paired t-test comparing the mean of two groups of data, namely pretest and post-test, with a test value of 0. The results of the analysis showed that there were statistically significant differences between the two groups of data. Significant value (s). 2-tailed) for both groups of data was very low (0.000), indicating that the difference between pretest and post-test could not have been chance. In addition, the 95% confidence interval for the mean difference between the two groups of data contained no zeros, confirming the statistical significance of the difference. The pretest average was 120.665 and the posttest average was 96.585, with a mean difference of 95.13333. This shows that there is a significant decrease in test scores from pre-test to post-test.

Table 3. Normality Test

Results	N	$L_{calculate}$	L_{table}	Description
Pretest	15	0.1453	0.216	Normal Distribution
Posttest		0.1292	0.216	Normal Distribution

Table 3. Results Of Athlete Score Conversion with Single Score Distribution

No	Athletes	$X - \bar{X}$	$(X - \bar{X})^2$	X	Description
1	M	-14	196	84	Medium
2	NCDP	-7	49	91	Good
3	MHAH	-5	25	93	Good
4	IC	-3	9	95	Good
5	ISR	-3	9	95	Good
6	RR	-3	9	95	Good
7	RM	-3	9	95	Good
8	RF	-3	9	95	Good
9	II	-2	4	96	Good
10	JS	-2	4	96	Good
11	HP	-1	1	97	Good
12	RJ	0	0	98	Good
13	M	1	1	99	Very Good
14	RF	1	1	99	Very Good
15	RZF	1	1	99	Very Good
Total		-43	327	1472	

Table 3 presents data on a variable (called X) for a number of athletes. Each row shows the athlete's number, the athlete's name, the x - X value (the difference between each athlete's

value and the average value), the square of this difference, the X value and the evaluation category assigned based on the difference value. Although the average (X) is not available in the table, we can calculate it by dividing the total value (X) by the number of athletes. The "Description" column, which contains the evaluation of the results of the research, assigns the athletes to the "medium", "good" or "very good" category based on the value of X - X. In addition, the statistical summary includes the sums of the columns" X - X, "" (X - X) ^2, "and" X, " which are -43, 327 and 1472.

Badminton Smash Precision Training Method Athletes of junior age of Eternal Badminton Union are carried out for 1 month. The average score of the experimental class was 39.00. The experimental class post-test value obtained that Ho was rejected at the level of significance 0.05. This gives 0.005 > 0.000. This means that Ho was rejected, and Ha was accepted, which means "the drill method can improve the accuracy of badminton smash of PB Immortal Junior age athletes".

DISCUSSION

Smash technique drills can be performed with basic drills, namely the accuracy of foot positions, hand movements and racket grips that suit the athlete (Aryanti et al., 2018; Sari et al., 2022; Triaiditya et al., 2018). The drill method can comprehensively help to optimise the stroke technique. Target practice can help players to identify specific targets on the field, such as corner angles or specific areas (Al Fajar et al., 2022). Strength training and physical conditioning can improve smash power and ensure optimal fitness (Arisetiawan, 2017; Marom et al., 2023). The drill method in badminton can include different aspects of technique, strength, balance and coordination. Smash technique can be practiced with hand and wrist movement exercises to improve the accuracy and power of the smash (Apriansyah et al., 2017; Argaha & Setiawan, 2022). In addition, strength training and physical condition are important aspects to improve smash power and ensure optimal fitness.

Based on previous research above that the results of using the drill method in badminton smash precision training method for PB Abadi junior athletes have a significant impact on improving better results than before using the drill method. Before the treatment is given to the sample, an initial test is carried out to determine the smashing ability. Based on the smash test measurements, the average accuracy of the smash pre-test is 29.80. Furthermore, given the form of the drill exercises, the final test using the same instrument increased by 10% compared to before using the drill method. From these measurements, the results obtained by the average ability to smash the top of the PB Immortal junior athletes turned into is 40.77.

The results of this study prompted further in-depth research. A more detailed analysis of the specific elements of the drill method may help to understand the mechanisms that enable improved athlete performance. Future research may focus on modifying drill methods or developing more specific drill strategies to maximise desired outcomes. The context of the study was limited to junior athletes of the Eternal Badminton Union. Therefore, caution should be exercised in generalising the results. Similar studies on other groups of athletes or with different training methods may be needed to validate these findings and to identify variations that may affect results on a broader level. Thus, this study not only contributes to the understanding of the effectiveness of drill methods in the context of junior badminton training, but also opens opportunities for further research that can provide in-depth insights into the factors that influence the improvement of athletes' technical skills in the sport of badminton.

CONCLUSION

The training method using the drill method has a positive effect on the accuracy of the PB Eternal junior badminton players. The results of the practice post-test, the most prominent Value Score is 99, the highest accuracy Smash athletes have a Value Score of 84 and an average value of 40.77. For coaches, it is expected to always pay attention to the ability of junior athletes in training basic badminton techniques by providing learning various effective training methods, including drill methods and other methods. For further research to develop different training methods by combining different training methods. This will help to identify in more depth the factors that can improve badminton smash results in junior age athletes.

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