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Improving lob ability in badminton athletes using throwing shuttlecock training

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Abstract

This study aims to determine the effect of throwing shuttlecock exercises on increasing lob skills in male athletes at the Bersatu Nimbokrang badminton club. The method used in this study was quasi-experimental. The variables in this study were throwing shuttlecock exercises and lob skills in badminton. The total sample of this research was 8 male athletes of the Bersatu Nimbokrang badminton club. The instrument in this study was using the French Clear Test. The data analysis technique used the prerequisite test which contained three stages, namely the normality test, homogeneity test, and hypothesis testing using the dependent t-test with the SPSS 22. From the results of the data analysis, it was obtained: (1) the normality test showed that all data variables had $sig > 0.05$, thus all data normally distributed, (2) pretest-posttest $sig > 0.05$, therefore the data was homogeneous (3) The results of the dependent t-test showed that the calculated t value was greater than t table $13.140 > 2.36$ and a significance value of $0.000 < 0.05$, with an increase of 51.75% and gives a significant effect. Thus, the hypothesis was accepted, there is an effect of throwing shuttlecock practice on increasing the ability to lob in male athletes in Bersatu Nimbokrang Badminton Club.

Keywords: Throwing shuttlecock, basic technique, lob

1. Introduction

Badminton is a game played by two people (single category) and in pairs (doubles) ^[1]. Badminton is in great demand by people of all ages, both for recreation and competition ^[2]. Badminton is one of the most popular and leading sports in Indonesia ^[3] ^[4]. Various types of coaching are carried out by the government to prepare for the regeneration of badminton athletes who have entered retirement. The central and regional governments have programs for identifying and developing talented athletes from an early age. Several programs were carried out namely, the Regional Student Athlete Training Center (PLAPD), the Development of Student Sports Training Center (PPOP), and the Student Education and Training Center (PPLP). In addition, coaching is also carried out independently through clubs spread throughout Indonesia.

Coaching is carried out to prepare physical, technical, tactical, and mental abilities from an early age ^[5]. Mastery of basic badminton techniques is very important for every prospective athlete who takes part in coaching ^[6]. Prospective athletes who have good technical skills will support performance in the game. The basic techniques in badminton consist of serves, lobs, smashes, backhands, drop-shots, chops, and netting ^[7] ^[8]. In addition to standing, racket holding techniques, shuttlecock hitting techniques, and step techniques are also things that need to be considered in training ^[9]. If a player does not master this technique, he will get used to making mistakes and it will be difficult to win the game ^[10].

A lob is a shot that is made by throwing the ball toward the back of the opponent's field ^[11]. A lob shot that is directed backward is intended to push the opponent to the back of the court and it is difficult to attack and return the shuttlecock ^[12]. Lob strokes are also used to improve a position when the game is under pressure ^[13]. To master the lob shot, good accuracy is needed so that the ball does not go off the field and a good step pattern ^[8] ^[14]. Apart from that, the physical components of arm and shoulder muscle strength are also important for athlete scalpers to support lob shots ^[15]. Apart from strength, player power and flexibility also play an important role in getting good shots to get points ^[16].

The lob shot is the first basic shot taught in the training [17]. This is because this punch is a punch that is easier to do compared to the other punches. However, in the development process, not all can apply the right training [18]. So that the basic ability of the athlete to lob is not good. Based on observations made at one of the clubs in Jayapura, namely the Bersatu Nimbokrang Badminton Club found several things, including the absence of an implementation of the training program while the researchers were playing in the club. The players or athletes tend to just play/compete without any training programs. This can be an indication of a lack of mastery of the basic techniques of hitting badminton.

One of the strokes or techniques that are not well mastered by players or athletes is the lob. A lack of mastery of basic lob techniques can be seen when players or athletes are playing or competing. The mistakes in lob shots are delays in swinging/splashing the racket so that the shuttlecock falls in its court area, players/athletes have difficulty hitting the shuttlecock far back because the shot is still too weak which results in a half ball. This makes it easier for opponents to return or attack even if opponents get points. In addition, the visible problem is the lack of hitting accuracy which causes the drop of the shuttlecock to widen to the left and also to the right so that the shuttlecock leaves the field resulting in a point for the opponent.

A lob shot is a difficult shot due to several factors, specifically a weak hit, contact with the ball with an inappropriate racket, the position of the foot when hitting the ball, and lack of practice [19] [20]. Another problem that occurs is that the lob ball that is given is not optimal, resulting in a half ball which makes it easy for opponents to carry out attacks [21]. To address the problems found in the field, the researcher intended to provide training to improve the lob ability of Bersatu Nimbokrang badminton club players. The form of training given was by giving treatment in the form of throwing shuttlecocks. This method has been widely used by coaches for novice players. Indirectly this method can increase the strength of the arm and shoulder muscles which can support the players' skills in the basic lob technique.

2. Methods

This study is a quasi-experimental research with a one-group pretest-posttest design. The population in this study was all athletes in the Bersatu Nimbokrang Club totaling thirty athletes. A purposive sampling technique was used in this study. Purposive sampling is a sampling technique with certain considerations [22]. The considerations were (1) male sex, (2) aged 18-19 years, (3) willing to be a sample, (4) not in a state of illness, and (5) a minimum training period of three months. Based on these criteria, there were 8 athletes or players who fulfilled the sample. The given treatment in the throwing shuttlecock training program was carried out 3 times in 1 week with a total of 12 meetings or 4 weeks. An increase in the training load every week was implemented in the prepared training program, such as additional sets. The program for the first week of training was throwing the shuttlecock 10 repetitions x 3 sets, the second week was practicing throwing the shuttlecock 10 repetitions x 4 sets, the third week was practicing throwing the shuttlecock 10 repetitions x 5 sets, and the fourth week was practicing throwing the shuttlecock 10 repetitions x 7 sets, on Sunday practice second to fourth week the addition of game lob exercises aimed at training the timing and impact of the racket against the impact of the shuttlecock. The research was conducted at GOR MAN Nimbokrang. The instrument in this

study was using the French Clear Test with an instrument validity of 0.60 and an instrument reliability of 0.96. Data collection was carried out twice, namely pretest and posttest. Data analysis techniques in this study used paired samples t-test to determine the results of the hypothesis, this test requires a prerequisite test. The prerequisite tests were the normality test and the homogeneity test. The hypothesis in this study reads "There is an effect of throwing shuttlecock exercises on increasing the ability to hit lobs in male badminton athletes from the Bersatu Nimbokrang Badminton Club.

3. Results & Discussion

3.1 Results

The results of this study are described using descriptive statistical analysis as follows, for the pretest results of 8 athletes in Bersatu Nimbokrang, the highest scores in the pretest = 63, the average points/scores = 46.13, the lowest points/scores = 37 with a standard deviation = 8.692, while in the posttest the highest points/scores = 82, the average points/score -average = 70.00, point/lowest score = 58 with standard deviation = 8.000. Then the normality test, homogeneity test, and paired sample t-test were performed.

Table 1: Pretest and posttest results

No	Pretest	Posttest
1	52	76
2	39	74
3	39	60
4	43	68
5	37	58
6	46	72
7	50	70
8	63	82
Mean	46.13	70.00
Median	44.50	71.00
Deviation Standard	8.692	8.000
Minimum	37	58
Maximum	63	82

Table 2 below is the result of the normality test. The rule used to determine whether a distribution is normal or not is if $\text{Sig} > 0.05$ the distribution is declared normal, and if $\text{sig} < 0.05$ the distribution is declared abnormal.

Table 2: Results of pre-test and post-test normality test

Group	p-Value	Sig	Decision
Pre-test	0.35	0.05	Normal
Post-test	0.81	0.05	Normal

From the results of the table above, it can be seen from the data that all variables have $\text{sig} > 0.05$, so all data is normally distributed. Because all data are normally distributed, homogeneity tests can be carried out. Homogeneity rule if $\text{sig} > 0.05$ then the test is said to be homogeneous, if $\text{sig} < 0.05$, then the test is said to be non-homogeneous.

Table 3: Results of pre-test and post-test homogeneity test

	Lavene statistic	Df1	Df2	Sig	Decision
Pretest-Posttest	.075	1	14	.792	Homogeny

From these results, it can be seen in the table test of homogeneity of variance for pretest-posttest $\text{sig} > 0.05$.

Because the data is homogeneous, a paired samples t-test can be performed. In table 4 it can be seen the results of the analysis using the paired samples t-test.

Table 4: Test of *Paired samples t-test*

Group	Mean	T-test for equality of means				
		t-test	t-table	Sig	difference	%
Pretest	46.13	13.140	2.36	0.000	23.87	51.75%
Posttest	70.00					

From the t-test, it can be seen that the t count is $13.140 > 2.36$ (t-table df 7) and a significance value of p is $0.000 < 0.05$, these results indicate that there is a significant difference between pretest and posttest lob ability in Bersatu Nimbokrang athletes. Thus, the hypothesis "There is an effect of throwing shuttlecock practice on increasing the ability to lob in male badminton athletes of Bersatu Nimbokrang Club" is accepted, indicating that throwing shuttlecock practice has a significant influence on the ability to lob the Bersatu Nimbokrang athletes. From the pretest data, it has an average of 46.13, then during the post-test, the average reached 70.00. The magnitude of the increase in lobs can be seen from the difference in the difference between the pretest and posttest average scores, namely 23.87, with a percentage increase of 51.75%. From these results, it can be seen in the table test of homogeneity of variance for the pretest-posttest $\text{sig} > 0.05$. Because the data is homogeneous, the data analysis can be continued with parametric statistics.

3.2 Discussion

The results of the study showed that there was an effect of throwing shuttlecock exercises on increasing the ability of players to lob. This exercise is widely implemented by several clubs or teams fostered by the government as an effort to improve lob skills in badminton [19]. Researchers tried to apply the method to the Bersatu Nimbokrang Badminton Club. The positive influence of the shuttlecock throwing method is because the shuttlecock throwing movement has the same character of motion when making a lob. The character of the same motion allows good results for the strokes made because these movements are following the biomechanics of motion. When the movement is carried out following the biomechanics of motion, it will be directly proportional to the original movement, namely the lob.

Mastering the basic technique of playing badminton is important for every player to perform at maximum [23]. In badminton, techniques for hitting the ball consist of service, lob, smash, drop shot, and netting [3]. The lob technique a technique that is quite difficult for beginners to do, this is because the shot must be hit to the back of the field [11]. Athletes who master basic techniques well can defend and attack with various variations [21]. The main factors for increasing achievement in badminton are coaches and players, this is because the abilities of coaches and players cannot be separated like two sides of a coin [23]. The role of a professional trainer will form good character in athletes so they can win the game [8].

Getting maximum performance requires various kinds of physical, technical, tactical, and mental readiness, considering that badminton is included in a competitive sport that requires explosive movements, fast running, jumping, smashing, body spinning, accuracy in changing direction, and wide gait without losing balance [9]. The dominant elements in lob shots are arm swing, arm muscle strength, wrist flexibility, and impact time on lobs [1] [24]. Arm swing in lob movement is

crucial. This is because a good swing or one that is following biomechanics will produce good strokes and energy efficiency [25]. The power can be used for energy reserves during the match. Various variations of training models were developed by coaches to improve basic lob skills in badminton.

Variations in drill exercises can also help improve lob skills [20]. Drilling variations such as modification of net height, use of standard nets, and modifications both affect the athlete's lob ability [12]. In addition, the provision of patterned and non-patterned lob exercises affects the accuracy of hitting shuttlecocks and rackets [14]. Unfortunately, not all coaches develop training models as variations to develop athlete skills [18]. The Clear overhead forehand exercise affects the player's lob ability [4]. In addition to developing training models to improve lob skills, it is also necessary to develop step pattern, training models. The development of footwork exercises has been shown to improve basic footwork skills in badminton games [18]. This is because, in the game of badminton, proper footsteps are also needed.

In badminton, not only technical abilities are trained, but also physical abilities [7]. Good physical ability is the basis for an athlete to get perfect movements [26]. Remembering that in the game of badminton players move quickly and precisely in changing directions continuously [17] [10]. The physical conditions needed are endurance, muscle strength and endurance, explosive leg power, speed, agility, and coordination [26].

Arm muscle strength is an important element in lob movements. This is because the muscle strength you have will affect how far the shuttlecock will be hit [15]. Lob training using a tennis racket can improve your lob-hitting ability because a tennis racket is heavier than a badminton racket [1]. Low muscle strength will affect the results of the punches made. Flexibility, power, and eye-hand coordination need to be owned by every badminton athlete [16]. This is because the characteristics of movement in badminton require agility and agility is also influenced by flexibility. In addition, the flexibility of the wrist affects the acceleration of the wrist and the accuracy of the direction of the swing [6]. A good wrist thrust and swing precision will result in a good shot.

The impact of shuttlecocks and rackets is also something that affects the quality of lob shots for players [27]. The impact of the shuttlecock and racket is influenced by the accuracy when hitting. However, the shuttlecock throwing method also has drawbacks because this method has more effect on correct movement and increased strength. Meanwhile, the relationship between the shuttlecock and the racket has not become the main topic of discussion. Even though the racket with the shuttlecock needs to be done [14]. Therefore, it is necessary to have further research to train the contact of the shuttlecock with the racket.

4. Conclusions

The results of the dependent t-test show that the calculated t value is greater than t table $13.140 > 2.36$ and a significance value of $0.000 < 0.05$, with an increase of 51.75% and gives a significant effect which means the hypothesis is accepted. Thus, there is an effect of throwing shuttlecock training on increasing the ability to lob at male badminton athletes at Bersatu Nimbokrang Badminton Club.

5. References

1. Fariz, Januarto OB. Meningkatkan Performa Bermain Bulutangkis Siswa SMP: Review Article, Sport Science

- and Health. 2022;4:589-599.
2. Indarto V, Nugroho S, Widiyanto, Rakhmawati SD. Analysis of backhand service badminton doubles athletes in the championship in Banyumas, International Journal of Physical Education, Sports, and Health. 2023;10:99-103.
 3. Aryapradana Cahyono D, Buhari MR. Analysis of Smash Forehand Badminton Strutting At The Age of 9-14 Years at Gemilang Badminton Club Samarinda, International Journal of Humanities Education and Social Sciences (IJHESS). 2023;2:1180-1185,.
 4. Rachman TN, Supriyadi S, Surendra M. Pengaruh pola latihan forehand overhead clear terhadap kemampuan teknik pukulan lob bulutangkis pada peserta ekstrakurikuler sman 4 Malang, Jurnal Sport Science. 2018;8:1-9.
 5. Bompa T, Carrera M. Conditioning young athletes, United States of America: Human Kinetics; c2015.
 6. Yogaswara, Pratama MS. Analysis Dumbbell Wrist Exercise against Backhand Overhead Lob Badminton Players, Quality in Sport. 2022;8:58-66.
 7. Sheng WY, Ginanjar A, Wei GT. The Effects of Teaching Badminton Practice on Improving Badminton Capabilities of Sports Department Students, European Journal of Molecular & Clinical Medicine. 2020;7(1):3853-3866.
 8. Sari MP, Januarito OB, Sugiarto T. Improving Forehand Drop Shot Stroke Skill in Badminton Through the Drill Method for Children, in Proceedings of the 3rd International Conference on Sports Sciences and Health, 2019 (ICSSH 2019), 2019.
 9. Alsaudi TBD. The Influence of Drill Exercise and Eye Coordination Foot Methods toward the Smash Skill of Badminton, in Proceedings of the 1st South Borneo International Conference on Sport Science and Education (SBICSSE 2019), Banjarmasin; c2019.
 10. Limatahu YA, Adam S, Rahayu T. Evaluations of Badminton Shots of Beginner Single Male Players in PB. Bimasakti Ternate, in Proceedings of the International Conference on Science and Education and Technology (ISET 2019), Semarang; c2020.
 11. Miftakhurrohman, Muhafid EA. Analisis Kemampuan teknik Pukulan Atlet Bulutangkis, Journal Olahraga dan Kesehatan Indonesia (JOKI). 2022;3:32-37.
 12. Hasibuan N, Dlis F, Pelana R. The Effect of Drilling Exercise Using Level Net and Standard Net to Improve Forehand Overhead Lob Technique for Badminton Beginner Players, in Proceedings of the International Conference on Educational Research and Innovation (ICERI 2019), Yogyakarta; c2019.
 13. Poole J. Belajar Bulutangkis, Bandung: Pionir Jaya, 2013.
 14. Shofiana M, Widiatmoko FA, Ardiyanto A. Perbedaan Pukulan Lob berpola dan Pemberian Lob Tak Berpola Langsung terhadap Ketepatan Pukulan Lob dalam Permainan Bulutangkis pada Atlet Pemula Putra PB Lindu Aji Ngaliyan, Journal of Physical Activity and Sports. 2021;2:64-70,.
 15. Emor R, Makadada F, Ompi S. Pengaruh Latihan kekuatan Otot Lengan terhadap Kemampuan Pukulan Lob dalam permainan Bulutangkis pada Mahasiswa Jurusan PKL FIK UNIMA, Journal Pendidikan Kesehatan dan rekreasi. 2022;3:89-95.
 16. Haekal M, Basri H. Analisis Power Otot Lengan, Kelentukan dan Koordinasi Mata-Tangan terhadap Pukulan Lob Permainan Bulutangkis, PARADIGMA Journal of Science, Religion and Culture Studies. 2021;18:44-61.
 17. Subarkah, Marani IN. Analisis Teknik Dasar Pukulan Dalam Permainan Bulutangkis, Journal MensSana, 2020;5:106-114.
 18. Dlis F, Haqiyah A, Hidayah N, Riyadi DN. Application of Sport Science on Development of Exercise Model Stroles badminton Based on Footwork, Journal of Education, Teaching and Learning. 2019;4:251-256.
 19. Putro WAS, Anwar S. Pengaruh latihan Drill Dan Lempar Bola Terhadap Ketepatan Pukulan Forehand Lob Overhead Pada Bulutangkis EkstrakurikulerSMP Negeri 1 Kota Jambi, Unimuda Sport journal. 2022;3:57-63.
 20. Sartiwi L PA, Setiawan IB. Pengaruh Metode Latihan Variasi Drill Terhadap Peningkatan Pukulan Forehand Overhead Lob Bulutangkis, Journal SCORE. 2022;2:94-98.
 21. Bimantara W, Permadi AG, Akhmad N. Analisis Keterampilan Dasar bulutangkis PB Gemilang Mataram Tahun 2021, Gelora: Journal Pendidikan Olahraga dan Kesehatan IKIP Mataram. 2021;8:7-19.
 22. Sugiyono, Metode Penelitian Kuantitatif, Kualitatif dan R&D, Bandung: Alfabeta, 2016.
 23. Yudhaprawira Asmawi M, Dlis F. Game-Based Badminton Smash Training Model for Beginner, in 3rd International Scientific Meeting on Public Health and Sports (ISMOPHS 2021), Malang, 2021.
 24. Ramasamy Y, Sundar V, Usman J, Razman R, Towler H. Relationships between Racket Arm Joint Moments and Racket Head Speed during the Badminton Jump Smash Performed by Elite Male Malaysian Players, Applies Science. 2022;12(2):1-9.
 25. Purnama SK, Dowes RI. Biomechanics analysis of badminton forehand smash in standing classification disability players, Journal of Physical Education and Sport. 2022;22(12):3183-3188.
 26. Argaha, Setiawan I. Kondisi Fisik dan Teknik Atlet Bulutangkisdi Kabupaten Banjarnegara, Indonesian Journal for Physical Education and Sport. 2022;3:214-221.
 27. Devi MS, Singh YS. A Comparative biomechanical analysis of different badminton strokes, in Emerging Trends of Physical Education and Sports Science, Delhi; c2022.