



The Effect of Shadow Training and Side Stepping Training on Agility in Badminton Athletes of at Pb. Fila Watch Makassar

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ARTICLE INFO	ABSTRACT
Published Online: 31 May 2025	This study aims to determine the Effect of Shadow Training on Agility in Badminton Athletes of PB. Fila Watch Makassar. To determine the Effect of Side Stepping Training on Agility in Badminton Athletes of PB. Fila Watch Makassar. And to determine the difference in the Effect of Shadow Training and Side Stepping Training on Agility in Badminton Athletes of PB. Fila Watch Makassar. This research method is experimental research because this study requires treatment that will be given to the sample. In this design, there are two groups that are selected randomly, then given a pretest to determine the initial condition, is there a difference between the Shadow training group and the Side Stepping training group. The sample taken for this study was 20 Badminton players of PB. Fila Watch Makassar City. The data analysis techniques used were normality test, homogeneity test, and hypothesis test using SPSS program. Based on the results of data analysis, hypothesis test results and research discussion results that have been obtained, the conclusions in this study can be explained, the first is There is an Influence of Shadow Training on Agility in Badminton Athletes of PB. Fila Watch Makassar. proven by an increase in the average value of 9.210 to 8.290 with a Tobervation value of 7.912> Ttab 2.262 and a significant value of 0.000 <α 0.05. Second, There is an Influence of Side Stepping Training on Agility in Badminton Athletes of PB. Fila Watch Makassar is proven by an increase in the average value of 9.267 to 8.792 with a Tobervasi value of 5.331> Ttab 2.262 and a significant value of 0.000 <α 0.05. And the third There is a difference in the Effect of Shadow Training and Side Stepping Training on Agility in Badminton Athletes with an average value of Shadow training 8.229 <average value of Side Stepping training 8.792 with a Tovservasi value of 4.625> Ttab 2.101. The conclusion is that Shadow training has a greater influence than Side Stepping Training in increasing the agility of Badminton Athletes PB. Fila Watch Makassar.
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I. INTRODUCTION

Badminton is a sport that combines speed, agility, and strategy, played with a racket and shuttlecock. Known worldwide, badminton has a wide appeal, both among professionals and amateurs. The sport offers health benefits, such as improving physical fitness and endurance, and is a popular recreational activity for many people.

In Indonesia, badminton has become a very popular and successful sport. Introduced in the early 20th century, badminton developed rapidly after the formation of the All-Indonesia Badminton Association (PBSI) in 1951. The existence of PBSI is an important factor in the development of badminton in the country, by organizing various tournaments and training for athletes. The popularity of this

sport is such that almost every corner of the room there are badminton courts, even in a very simple form. Badminton for the Indonesian people is a sport that brings a good name to the Indonesian people. This is proven by the success of our badminton athletes in winning various tournaments both at the ASEAN, Asia and world levels and so on.

The Indonesian people have known badminton since the Dutch colonial era. However, at that time the badminton associations that were formed then moved alone without a single goal and a single ideal of struggle in the independent country. This certainly cannot be allowed to continue. It must be attempted to have one organization nationally, as a unifying organization. To take the path towards one organizational container, the most appropriate way is to bring

together badminton figures in one congress. At that time it was indeed rather difficult to communicate between one region and another. The only thing that could be done was the Java island environment, and that could be done after the formation of PORI (Indonesian Republic Sports Association). The efforts made by Sudirman and his friends through letters, the essence of which was to invite people to establish a badminton association, brought results. So, at a meeting on May 5, 1951 in Bandung, the All Indonesia Badminton Association (PBSI) was born and the meeting was recorded as the first PBSI congress.

In South Sulawesi, badminton has an interesting history and development. This province is one of the areas that is active in the development of badminton, with many clubs and academies established. Local badminton tournaments are often held, encouraging public interest to participate and improving the talents of young players. Badminton players from South Sulawesi are also starting to get attention at the national level. Several athletes from this area have succeeded in achieving achievements in national tournaments and becoming part of the Indonesian badminton team. This success shows the great potential of players from South Sulawesi in the world of badminton.

One way to train it is with shadow badminton training (footwork movements with shuttlecock and racket or without both). This shadow training model is very good for training agility and mastery of hitting techniques. While doing it, athletes must be able to imagine the direction the shuttlecock is coming from with real movements like playing, this is what will affect the results of the shadow training itself. To make foot movements step forward, then sideways and backwards is the most important footwork technique.

Side Stepping training can improve the spatial ability and balance of athletes. Side stepping training is very good for improving balance, muscle strength, and agility. This exercise helps train the stabilizer muscles, which are important for maintaining body balance when moving. The side stepping movement involves the inner thigh muscles, outer thigh muscles, and gluteus muscles, all of which contribute to overall leg strength. This side stepping exercise is also useful for improving agility in badminton. This exercise aims to train players to be more agile in moving sideways, so that they can take a better position when receiving or returning the shuttlecock in badminton. Badminton athletes of the Fila Watch Badminton Association or commonly abbreviated as PB Fila Watch, Makassar City is one of the badminton clubs that has been established for quite a long time in Makassar City. The training program is implemented by dividing athletes using an age system, starting from early age, children, beginners, teenagers, cadets, and adults. Each player has a different level of physical condition and agility techniques. PB Fila Watch has sports achievements. At the national level, players from PB Fila Watch who have been sent to participate in the National Championship competition. The past four years have often

failed to win, such as in the men's doubles at the SIRNAS Championship (National Circuit), PB Fila Watch players failed in the semifinals. This badminton sport is a very interesting sport and is not something foreign to them.

The situation on the field shows PB. Fila Watch Makassar that in the results I got during the match, most PB. Fila Watch Makassar athletes lost due to lack of agility in the athletes or players. Athletes or players have difficulty changing direction when anticipating the opponent's smash, resulting in points for the opponent and also most have difficulty applying sequential step techniques, and these techniques provide quite good results in improving agility. From the results of the video analysis of professional athletes, it was found that the use of sequential step techniques is more dominant. However, there is no significant scientific evidence that sequential and crossing techniques can improve foot agility in badminton. From these findings, coaches should be able to utilize training models through technology and focus on athlete weaknesses. As happened at PB. Fila Watch Makassar, the application of training models is less varied. The ability of the results of the training is still diverse and less than optimal, especially in foot agility. Although the coach has provided various training models to improve agility. Based on the problems described above, the researcher intends to propose a shadow training program and side stepping steps for PB. Fila Watch Makassar athletes. To find out whether there is a difference in the training results of both and if there is a difference, which shadow training and side stepping produces better foot agility.

II. METHODS

This research method is experimental research because this research requires treatment to be given to the sample. Experimental research is a research method used to find the effect of certain treatments on others under controlled conditions. Experimental research materials are research that is intended to determine whether or not there are effects from something imposed on the research subject.

This research was conducted in December 2024 to January 2025, located at PB. Fila Watch located at Jl. Moh. Jufri No.20, Tammua, Makassar City. In this design, there are two groups that are selected randomly, then given a pretest to determine the initial condition, whether there is a difference between the side stepping exercise group and the shadow exercise group. Good pretest results if the values of the side stepping exercise group and the shadow exercise group are not significantly different. The Effect of Treatment is (02-01) - (04 - 03).

Population is a generalization area consisting of: objects/subjects that have certain qualities and characteristics determined by the researcher to be studied and then conclusions drawn Population. The population in this study were 27 active badminton players of PB. Fila Watch Makassar.

According to (Junaidi & Susanti, 2019) a population of individuals who have the same characteristics even though the percentage of similarity is small, or in other words all individuals who will be used as research objects. It can be concluded that a population is all individuals or groups that can be observed from several group members or all objects in the study. The population in this study was 27 badminton players of PB. FilaWatch Makassar.

According to (Millah & Suryana, 2020) a sample is part of the number and characteristics possessed by the population. This study used a random sampling technique. Thus, the sample taken for this study was 20 Badminton Club PB players aged 13 to 15 years. Fila Watch Makassar. The sample was pretested to determine two balanced treatment groups. The treatments were ranked based on their pretest scores, then paired using an A-B-B-A pattern (ordinal pairing) in two groups of 10 members each.

The instrument in this study used the T Test (Paule, et al. 2000) which was modified by conducting a pretest at PB. Fila Watch Makassar which obtained a validity value of 0.764 with an r value in the correlation table of 0.316 with a sign level of 5% and 0.408 at a sign level of 1% and a reliability value of 0.862 with SPSS 23, with the reason for modifying because the badminton court has a length of 13.40 m and a width of 6.10 m,

Data collection techniques are the most important step in research, because the main purpose of the study is to obtain data (Sugiyono, 2015). To obtain data on the Effect of Shadow Training and Side Stepping Training Groups on Badminton Agility at PB. Fila Watch Makassar as material to test the truth of the hypothesis, data collection was carried out based on Shadow Training and Side Stepping Training Groups. The data that needs to be collected in this study includes; pretest and posttest data from agility tests in badminton games. After the data is collected, the next step is to analyze the data. Data analysis in this study uses the t-test technique, namely by comparing the average (mean) between the initial test (pretest) and the final test (posttest) of agility. Before testing the hypothesis, a prerequisite test is needed. Testing the measurement data related to the research results aims to help the analysis become better. For this reason, a prerequisite test is needed first, namely the normality test and the data homogeneity test.

III. RESULTS

1. Research Analysis

The results of the descriptive data analysis, the calculations of which are listed in the appendix, can be described as follows:

Table 4.1. Results of Descriptive Data Analysis

	Pretest Exercise Shadow	Posttest Exercise Shadow	Pretest Exercise Side Stepping	Posttest Exercise Side Stepping
Val	10 0			
id N				
Missing				
Mean	9.2100	8.2290	9.2670	8.7920
Median	9.1900	8.1700	9.2700	8.8300
Std.	.34257	.23407	.34648	.30561
Deviation				
Variance	.117	.055	.120	.093
Range	1.05	.72	1.02	1.09
Minimum	8.76	8.02	8.86	8.21
Maximum	9.81	8.74	9.88	9.30
Sum	92.10	82.29	92.67	87.92

Based on the summary of the results of the descriptive analysis of the data in table 4.1 above, it can be described as follows:

- Descriptive data results of the initial test (pretest) of Shadow training on agility in badminton athletes PB. Fila Watch Makassar, from 10 samples obtained a total value of 92.10 seconds. The average value obtained 9.2100 seconds with a standard deviation of .34257 and a variance value of .117. For the range value obtained 1.05 seconds from a minimum value of 8.76 seconds and a maximum value of 9.81 seconds.
- Descriptive data results of the final test (posttest) of Shadow training on agility in badminton athletes PB. Fila Watch Makassar, from 10 samples obtained a total value of 82.29 seconds. The average value obtained 8.2290 seconds with a standard deviation of .23407 and a variance value of .055. For the range value obtained .72 seconds from a minimum value of 8.02 seconds and a maximum value of 8.74 seconds.
- Descriptive data results of the initial test (pretest) of Side Stepping Exercise on agility in badminton athletes PB. Fila Watch Makassar from 10 samples obtained a total value of 92.67 seconds. The average value obtained was 9.2670 seconds with a standard deviation of .34648 and a variance value of .120. For the range value obtained 1.02 seconds from a minimum value of 8.86 seconds and a maximum value of 9.88 seconds.
- Descriptive data results of the final test (posttest) of Side Stepping Exercise on agility in badminton athletes PB. Fila Watch Makassar, from 10 samples obtained a total value of 87.92 seconds. The average value obtained was 8.7920 seconds with a standard deviation of .30561 and a variance value of .093. For the range value obtained 1.09 seconds from a minimum value of 8.21 seconds and a maximum value of 9.30 seconds.

2. Requirements Test

a. Sample normality testing

From the results of the Kolmogorov-Smirnov Test conducted, the results obtained are as attached. The calculation results can be seen in the following summary table 4.2:

Table 4.2. Results of data normality test

Group	Kolmogorov Smirnov		α	Note
	Statistic	P		
<i>Pretest Exercise Shadow</i>	0,158	0,200	0,05	Normal
<i>Pretest Exercise Side Stepping</i>	0,196	0,200	0,05	Normal

Based on table 4.2, which is a summary of the results of the data normality test on each research variable, it can be described as follows:

- The results of the data normality test with the Kolmogorov-Smirnov Test, then the Shadow training on agility in badminton athletes PB. Fila Watch Makassar, the Kolmogorov-Smirnov Test value obtained was 0.158 with a probability level (P) of 0.200 greater than the value of $\alpha 0.05$. Thus, the Shadow data on agility in badminton athletes PB. Fila Watch Makassar obtained follows a normal distribution or is normally distributed.
- The results of the data normality test with the Kolmogorov-Smirnov Test, then the Side Stepping Training on agility in badminton athletes PB. Fila Watch Makassar Kolmogorov-Smirnov Test value obtained 0.196 with a probability level (P) of 0.200 greater than the value of $\alpha 0.05$. Thus, the Side Stepping Exercise data on agility in badminton athletes PB. Fila Watch Makassar obtained follows a normal distribution or is normally distributed.

b. Homogeneity testing

This homogeneity test serves as a requirement in testing samples from a homogeneous population.

Table 4.3. Summary of homogeneity test data for Shadow exercise variables and Side Stepping Exercises

Agility	Levene Statistik	Df 1	Df 2	Sig
<i>Pretest of Shadow and Side Stepping exercise groups</i>	0,008	1	18	0,930

Based on table 4.3, the homogeneity test of the pretest data of the Shadow training group and the Side Stepping Training group for agility in badminton athletes of PB. Fila Watch Makassar with the Levene test is 0.008 with a significant value of 0.930. Because the significant value is greater than $\alpha 0.05$ or a significant level of 95%, therefore the pretest of the Shadow training group and the Side Stepping Training group on agility in badminton athletes of PB. Fila Watch Makassar for both training groups is homogeneous or comes from the same group.

3. Hypothesis Testing

a. The effect of Shadow training on agility in badminton athletes of PB. Fila Watch Makassar

The first hypothesis test is to determine the effect of the Shadow training group on agility in badminton athletes of PB. Fila Watch Makassar, using a paired t-test, namely the pretest and posttest of agility in badminton athletes of PB. Fila Watch Makassar. The explanation can be seen in the following summary Table 4.4: Statistical hypothesis:

$H_0 : \mu A1 - \mu A2 = 0$

$H_1 : \mu A1 - \mu A2 \neq 0$

Table 4.4. Results of processing the first hypothesis data

hypothesis	Mean	toobservasi	table	P	α	Note
<i>Pretest</i>	9,2100					
<i>Posttest</i>	8,290	7,912	2,262	0,000	0,05	Significant

Summary of pretest and posttest data analysis on agility in badminton athletes PB. Fila Watch Makassar, with a paired t-test in the Shadow training group. It can be concluded that there is a significant effect on the Shadow training group on agility in badminton athletes PB. Fila watch Makassar, the observation value is 7.912 greater than the ttable value of 2.262

(7.912 > 2.262) with a significant value of 0.000 smaller than $\alpha 0.05$. Then H_0 is rejected and H_1 is accepted, meaning there is a difference between the initial test (pretest) and the final test (posttest). Thus it can be concluded that there is a significant effect of Shadow training on agility in badminton athletes PB. Fila Watch Makassar.

It can be proven that the average posttest value is lower than the average pretest value or ($\mu A1 9.2100 < \mu A2 8.290$) with a difference of 0.92. Thus, it can be concluded that there is a significant influence of Shadow training on agility in badminton athletes of PB. Fila Watch Makassar.

b. The Effect of Side Stepping Exercise on Agility in Badminton Athletes of PB. Fila Watch Makassar

The second hypothesis test is to determine the effect of the Side Stepping Exercise group on agility in badminton athletes of PB. Fila Watch Makassar, using a paired t-test, namely pretest and posttest agility in badminton athletes of PB. Fila Watch Makassar. The explanation can be seen in the following summary table 4.5:

Statistical hypothesis:

Ho : $\mu A1 - \mu A2 = 0$

H1 : $\mu A1 - \mu A2 \neq 0$

Table 4.5. Results of processing the second hypothesis

Hypothesis	Mean	tobservasi	ttable	P	α	Note
Pretest	9,2670	5,331	2,262	0,000	0,05	Significant
Posttest	8,7920					

Summary of pretest and posttest data analysis on agility in badminton athletes PB. Fila Watch Makassar, with a paired t-test in the Side Stepping Exercise group. It can be concluded that there is a significant effect on the Side Stepping Exercise group on agility in badminton athletes Pb. Fila Watch Makassar, obtained an observation value of 5.331 greater than the ttable value of 2.262 ($5.331 > 2.262$) with a significant value of 0.000 smaller than $\alpha 0.05$. So Ho is rejected and H1 is accepted, meaning there is a difference between the initial test (pretest) and the final test (posttest). Thus it can be concluded that there is a significant effect of Side Stepping Exercise on agility in badminton athletes PB. Fila Watch Makassar.

It can be proven that the average posttest value is higher than the average pretest value or ($\mu A1 9.2670 < \mu A2 8.7920$) with a difference of 0.475. Thus, it can be concluded that there is a significant effect of Side Stepping Exercise on agility in badminton athletes of PB. Fila Watch Makassar.

c. Differences in the influence of Shadow training and Side Stepping training on agility in badminton athletes of PB. Fila Watch Makassar

The third hypothesis test, namely to determine the differences in the influence of the Shadow training group and Side Stepping training on agility in badminton athletes of PB. Fila Watch Makassar, using an unpaired t-test, namely the final test (posttest) of agility in badminton athletes of PB. Fila Watch Makassar Shadow training group and Side Stepping training group. The explanation can be seen in the summary of table 4.6 below:

Ho : $\mu A2 - \mu B2 = 0$

H1 : $\mu A2 - \mu B2 \neq 0$

Table 4.6. Results of processing the third hypothesis

Hypothesis	Mean	tobservasi	ttable	P	α	Note
Posttest Exercise Shadow	8,2290	4,625	2,262	0,000	0,05	Significant
Posttest Exercise Side Stepping	8,7920					

Based on table 4.6, the results of the posttest data analysis of the Shadow training group and Side Stepping training on agility in badminton athletes PB. Fila Watch Makassar. It can be concluded that there is a significant difference in influence between the Shadow training group and the Side Stepping training group on agility in badminton athletes PB. Fila Watch Makassar, the observation value of 4.625 is greater than the ttable value of 2.262 ($4.625 > 2.262$) with a significant value of 0.000 greater than $\alpha 0.05$. So Ho is rejected and H1 is accepted, meaning there is a difference in influence between the final test (posttest) of the Shadow training group and the Side Stepping training. Thus it can be concluded that there is a significant difference in influence between Shadow training and Side Stepping training on agility in PB athletes. Fila Watch Makassar. While to prove the difference between the Shadow training group and the Side Stepping training on badminton agility. This can be proven by the posttest of the Shadow training group obtained an average value of 8.2290 better than the average value of the Side Stepping training group 8.7920 ($\mu A2 8.2290 \geq \mu B2 8.7920$).

With these results showing a difference in average value of 0.563 after the posttest or final agility test in badminton athletes PB. Fila Watch Makassar, and the Shadow training group is better than the Side Stepping training group.

IV. DISCUSSION

To achieve the meaningfulness of the data results that have been tested for their truth in this study, the following will be discussed further as follows:

a. The effect of Shadow training on agility in badminton athletes PB. Fila Watch Makassar

The results of data processing to test the first hypothesis, namely the effect of shadow training on agility in badminton athletes PB. Fila Watch Makassar. Shadow training, which simulates the movement of badminton players without using a shuttlecock, aims to improve agility through repetition of movement patterns. The data shows a significant difference between the pretest and posttest results, with an average pretest time of 9.2100 seconds, and a posttest of 8.290 seconds, which means that there is an increase in agility in athletes. The observation value obtained is 7.912, while the ttable value is 2.262. The observation value which is much greater than the ttable indicates that the test results are statistically significant. With a probability value (P) of 0.000, which is smaller than the significance level ($\alpha = 0.05$), it can be concluded that there is a significant effect of shadow training on athlete agility. This shows that this training method is effective in developing the reflex movement and quick response abilities of players. In general, shadow training helps athletes improve their ability to move quickly and efficiently on the court. Movements such as stepping in various directions, changing body positions, and foot coordination are very important in badminton. The decrease

in the average time from pretest to posttest shows that this training has succeeded in improving player agility, which is one of the key factors in improving performance on the court. From these results, it can be seen that shadow training not only affects reaction time, but also on mastery of movement techniques. Athletes who follow this training tend to be better able to anticipate the direction of the shuttlecock and move with better efficiency, so they can save energy during the match. Thus, the results of this study provide empirical evidence that shadow training is one of the essential methods for training badminton athlete agility. Based on these significant results, PB. Fila Watch Makassar can consider including shadow training as part of their regular training program. This training not only helps improve agility but also prepares athletes to face dynamic match situations. With consistent implementation, it is expected that the overall performance of athletes can improve, both at the local and national levels. The results of this study indicate that agility is very necessary in badminton, as stated by Widiastuti (2015: 125). Agility is the ability to change direction or body position quickly and is done together with other movements, so that athletes who have high agility are able to move quickly and easily in all directions. To obtain high agility, shadow training is very helpful in improving agile and regular foot movements to make players feel comfortable playing badminton.

b. The Effect of Side Stepping Exercise on Agility in Badminton Athletes of PB. Fila Watch Makassar

The results of data processing for the second hypothesis, which tests the effect of side stepping exercise on agility in badminton athletes of PB. Fila Watch Makassar. Side stepping exercise focuses on lateral (sideways) movements which are very important in badminton. The average pretest time of athletes was 9.2670 seconds, while the average posttest decreased to 8.7920 seconds, indicating an increase in agility after undergoing training. The observation value obtained was 5.331, while the ttable value was 2.262. With observation > ttable and a probability value (P) of 0.000, which is smaller than the significance level ($\alpha = 0.05$), these results indicate that side stepping exercise has a significant effect on increasing athlete agility. These results indicate that this exercise can help athletes sharpen their lateral movements which are very important in facing fast opponent games. Side stepping exercises help athletes to improve their reaction speed and ability to move positions efficiently on the court. Fast and controlled lateral movements are essential in badminton, especially in defensive and offensive situations. The decrease in mean time from pretest to posttest indicates that this exercise is very effective in improving athletes' agility, especially in terms of horizontal movement. In addition, side stepping exercises help improve foot technique and overall body coordination. Athletes who follow this exercise tend to be more able to move stably and quickly, thus optimizing their performance on the court. The ability to move sideways quickly also helps athletes to anticipate

opponent attacks and return the shuttlecock in a better position.

c. Differences in the influence of Shadow training and Side Stepping training on agility in badminton athletes of PB. Fila Watch Makassar

Comparing the influence of shadow training and side stepping training on agility in badminton athletes of PB. Fila Watch Makassar. Based on the posttest results, the average time for shadow training was 8.2290 seconds, while the average time for side stepping training was 8.7920 seconds. This difference shows that shadow training provides more significant results in improving athlete agility compared to side stepping training. The observation value obtained was 4.625, while the ttable value was 2.262. With a tobs value > ttable and a probability value (P) of 0.000, which is smaller than the significance level ($\alpha = 0.05$), it can be concluded that there is a significant difference between these two training methods. These results indicate that although both types of training are effective, shadow training has a greater influence on athlete agility. Shadow training is more effective because it involves direct simulation of match movements, allowing athletes to adapt to real game situations. Meanwhile, side stepping training focuses more on strengthening lateral movements only. Therefore, shadow training is able to train agility more comprehensively compared to side stepping training. However, it is important to note that these two exercises complement each other and are equally beneficial for the development of athletes, although until now there has been no particular figure who is specifically known as the main researcher who studies Side Stepping Training in badminton, but many coaches and sports scientists have studied various aspects of agility and Technique in badminton including specific exercises such as Side Stepping. One of the badminton sports studies (Prof. Dr. J. A. McGarry) stated in badminton sports research, including agility and badminton sports techniques. Shadow training improves reflex movement abilities and reaction speed in general, while side stepping training places more emphasis on lateral movements which are very important in badminton. By combining these two exercises, athletes can develop agility comprehensively. So the results of this study provide recommendations for PB athletes. Fila Watch Makassar to consider the combination of these two training methods in their training program. By utilizing the advantages of each training, athletes can improve their agility, technique, and performance optimally. This will have a positive impact on their achievement in various competitions.

V. CONCLUSION

After conducting research on the problem of the influence of Shadow training and Side Stepping training on agility in badminton athletes PB. Fila Watch Makassar, the following conclusions were drawn:

1. There is a significant influence of Shadow training on agility in badminton athletes PB. Fila Watch Makassar

2. There is a significant influence of Side Stepping training on agility in badminton athletes PB. Fila Watch Makassar.
3. There is a significant difference in influence between Shadow training and Side Stepping training on agility in badminton athletes PB. Fila Watvh Makassar, and Shadow training is more effective than Side Stepping training

REFERENCES

1. Amar, I. Y. (2016). The effect of SAQ (Speed, Agility, Quickness) training on increasing the agility of female badminton athletes in the double age group of PB. Djarum. STATE UNIVERSITY OF JAKARTA.
2. Ariandi, J. (2020). The Effect of Target Games on the Accuracy of Long Forehand Serves in Badminton Games for PB Bank Riau Kepri Pekanbaru Players. In Doctoral dissertation, Universitas Islam Riau.
3. DENATARA, E. T. (2021). Badminton Textbook. GUEPEDIA.
4. Elba, R. A., & others. (2016). The Effect of Circuit Training on Increasing Arm Power, Leg Power, Agility, and Aerobic Endurance (VO2 Max) in Badminton in Grade XI Male Students of SMK Trisakti Bandar Lampung.
5. Grice, T. (1996). Badminton: A practical guide for beginners and advanced. PT RajaGrafindo Persada.
6. Hamid, A., & Aminuddin, M. (2019). The Effect of Footwork Training on Agility in Badminton Players of PBSI Tanah Laut Aged 12-15. Multilateral: Journal of Physical Education and Sports, 18(1).
7. Hudain, A. (2021). Indonesian Journal of Physical Activity. 1(2), 139–148.
8. James, P. (2013). Learning Badminton. Bandung: Pionir Jaya.
9. Junaidi, R., & Susanti, F. (2019). The Effect of Leadership Style and Organizational Culture on Employee Performance at the UPTD Baltekkomdik, West Sumatra Provincial Education Office.
10. Kamaruddin, I. (2019). The Effect of Physical Ability on Smash Skills in Badminton. SPORTIVE: Journal Of Physical Education, Sport and Recreation, 2(2), 114–127.
11. Kurniawann, I. A., & Lismadiana, L. (2019). THE EFFECT OF BASIC MOVEMENT EXERCISE ON BADMINTON ATHLETE DISORDERS THE EFFECT OF BASIC MOVEMENT EXERCISE ON BADMINTON ATHLETE DISORDERS. Sports Coaching Education-S1, 8(6).
12. Mahreza, R., & others. (2024). RELATIONSHIP BETWEEN FLEXIBILITY AND AGILITY WITH SMASH ABILITY IN BADMINTON ATHLETES OF PB LAUSER ACEH TENGAH. Bina Bangsa University Getsempena.
13. Mirfan, F. F., Syahara, S., Donie, D., & Yendrizal, Y. (2020). Shuttle Run and Zig Zag Run Contribute to Badminton Athletes' Footwork Ability. Patriot Journal, 2(4), 928–939.
14. Millah, H., & Suryana, H. (2020). The Effect of Employee Service Quality on Consumer Satisfaction (Case Study at Alfamart in Karangbong Village, Pajarakan District). Journal of Islamic Economics and Business, 6(2), 134–142.
15. Muhajir. (2015). Physical Education Theory and Practice for Senior High School Grade X. Jakarta: Erlangga.
16. Nugroho, T., Pinatih, G. I., Munawwarah, M., Handari, L., Adiputra, I., & Irfan, M. (2018). Addition of Core Stability Combination Training to Footwork Training Increases Agility of Female Badminton Players of Pb. Puma Mas Madiun. Sport and Fitness Journal, 6(1), 83–90.
18. Okanansa, R., Sukendro, S., & Mardian, R. (2022). The Effect of Ladder Drill Training on Increasing Agility in Pb Unja Badminton Athletes Aged 9-13 Years. Cerdas Sifa Pendidikan, 11(2), 86–96.
19. Pangkey, H. (2015). Differences in Shadow Badminton Training Results Between Point Movement and Moving the Shuttlecock on Foot Agility for Early Age Groups and Beginners PB Pendowo Semarang in 2014. Semarang: UNNES.
20. Pratiwi, E., & Prayoga, H. D. (2019). Analysis of Reaction Speed in Uniska Volleyball Athletes. Riyadhoh: Journal of Sports Education, 2(1), 1–8.
21. Purnama, S. K. (2010). Modern badminton coaching. Surakarta: Yuma Pustaka.
21. Sugiyono, D. (2015). Educational research methods using quantitative, qualitative and R&D approaches.
22. Saputra, Y., & Lismadiana, L. (2019). The Effect of Core Stability Training on Improving Agility of Badminton Players in Pb Persada Kulon Progo. Sports Coaching Education-S1, 8(6).
23. Satriyo, E. B. (2020). Design of a badminton athlete training center in Malang with a smart building approach. State Islamic University of Maulana Malik Ibrahim.
24. Suantika, I. G. D., Sumerta, I. K., & Santika, N. A. (2016). Double Leg Bound Training 10 Repetitions 5 Sets Increases Explosive Power of Leg Muscles of Male Students of Class VIII D SMP PGRI 5 Denpasar in the 2015/2016 Academic Year. Journal of Recreational Health Education, 2(2), 27–30.
25. Sukesih, S. (2015). Application of Shadow Training in an Effort to Increase Agility in Badminton Game Material. Dynamics of the Scientific Journal of Elementary Education, 7(1).
26. Widhiyanti, K. A. T., Rusitayanti, N. W. A., Ariawati, N. W., Palgunadi, I. K. A., Bagia, I. M., & Artawan, I. K. S. (2022). PelHudain, A. (2021). Indonesian Journal of Physical Activity. 1(2), 139–148.

27. Kurniawann, I. A., & Lismadiana, L. (2019). THE EFFECT OF BASIC MOVEMENT EXERCISE ON BADMINTON ATHLETE DISORDERS. Sports Coaching Education-S1, 8(6). shadow shuttlecock training on improving badminton athlete agility. Journal of Recreational Health Education, 8(2), 423–430.