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The Effect Of Shadow Training Using A Racket And Shadow Training Using A Shuttlecock On The Agility Improvement Of Athletes In Badminton

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Abstract
Agility is the ability to move to change direction quickly without losing balance. This study aims to determine the effect of shadow training methods using rackets and shadow training using shuttle cock on increasing the agility of UPI Badminton UKM athletes. The method used in this research is an experimental method using A Group Pre-test and Post-Test Design. The population in this study were all UPI badminton UKM athletes totaling 32 people, the sample used a purposive sampling technique of as many as 12 people. The data collection technique was carried out by giving an initial test to 2 groups. Then given treatment with the shadow training method using a shuttle cock and shadow training using a racket, then given a final test using the shadow 2 return test. Data processing techniques were carried out with descriptive statistical analysis and paired t-tests. Both shadow training methods influence increasing agility, but the shadow training method using shuttle cock has a more significant influence. So it can be concluded that the shadow training method using shuttle cock has a more significant effect on increasing the agility of UPI Badminton UKM athletes.
Keywords: agility, badminton, racket, shadow, shuttle cock.

INTRODUCTION

Badminton is one of the most popular game sports and is widely favored by the public, both domestic and foreign, young and old. This is supported by previous research that badminton is one of the most popular sports in Indonesia (Setiawan et al., 2020). This sport is also very popular with people in all circles, from young to old, men and women (Achmad Rifai et al., 2020; Muthiarani & Lismadiana, 2021). Furthermore (Hadjarati et al., 2023) explained that badminton is a very popular racket sport in Indonesia, covering various economic backgrounds, genders, ages, and generations. So from this explanation, it can be concluded that badminton is very popular in all circles, this badminton sport is played using a racket and shuttle cock and a field separated by a net between the players.

Badminton is a fast and complex game, besides that, this game has many basic techniques and variations of shots that must be mastered by the players. There are four basic technical skills in badminton, namely a) racket holding techniques, b) footwork management techniques, c) ball striking techniques, and d) techniques for mastering attack and defense patterns (Ishak et al., 2020). Badminton players must be able and skilled in performing complex movements (Kehi & Kusuma, 2019). In terms of complex games, this sport has basic technical skills that must be mastered by players, including (1) standing attitude (stands) (2) racket holding techniques, (3) ball hitting techniques, and (4) footwork techniques. Apart from good basic technical skills, another thing that badminton players must master is good physical condition components such as agility, speed, endurance, and strength (Muthiarani & Lismadiana, 2021). This is in line with what is explained by (Seth, 2016) the basic badminton technical skills that need to be learned in general can be grouped into several parts, namely; (1) holding a racket; (2) stance; (3) footwork; and (4) strokes.

Judging from its characteristics, badminton is a sport that requires athletes to have a qualified or excellent physical condition. In high-level games, especially in singles, this sport demands excellent

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fitness requiring aerobic stamina, explosive strength, speed, and accuracy (Luo et al., 2022). The training component in badminton athletes consists of physical condition, technique, tactics, and mentality, the four components are important factors in improving athlete performance, especially in badminton (Ilham Irawan et al., 2020). Van Custem (2019) explains that factors can underlie an athlete experiencing greater resistance to physical performance disorders related to mental fatigue.

Based on the results of the author's experience while participating in training at the Badminton Student Activity Unit (UKM) of the Indonesian Education University (UPI), the problem that occurs is that athletes often have difficulty in reaching the shuttle cock and changing direction quickly, this certainly makes athletes unable to play optimally. After the author interviewed the UPI Badminton UKM coach named Ahamad Saepul Azhari he acknowledged the problem. This is also in line with research conducted (Islamiah & Sepdanius, 2019), that the lack of mastery of the field causes athletes to have difficulty returning the shuttle cock so that the shot is not optimal, of course the main factor of that condition is the lack of agility. The findings of the badminton athlete agility test conducted by (Dwiapta & Yaslindo, 2020) were that as many as 9.09% (1) were categorized as excellent, 9.09% (1) good, 27.7% (3) moderate, 36.6% (4) less, and 18.8% very less.

Badminton is one of the sports that requires agility and also requires athletes to move quickly to chase the shuttle cock in various directions (Malwanage et al., 2022). Agility is the ability to move the body in a changing direction or position quickly without losing balance (Al Farisi, 2018; Ihsan et al., 2023). To obtain high agility, shadow training is very helpful in increasing agility and regular foot movements so that players feel comfortable playing badminton (Rahman et al., 2020; Tan et al., 2023). Rofiqy et al. (2020)also explained that agility is an element of motion ability that an athlete must have because agility can change the direction and position of the body or parts of it quickly and precisely. Furthermore, other studies explain that agility plays an important role in badminton games, namely to move quickly in various changes in motion and direction of shuttle cock movement while playing (Kartika et al., 2022; Ihsan et al., 2024). As explained by (Rofiqy, Jayadi, & Kes 2020) that it is undeniable that this branch requires speed and mobility of movement combined with agility which is usually used to close the field, or to close the shuttle cock in all directions. In addition, another factor that causes agility to be less improved is the forms of agility training that are less done by UKM athletes. Many forms of agility training can be done by badminton athletes, but these forms have not been implemented properly. Research conducted by (Novanto et al., 2023) found that training with the three-corner drill method and the Illinois drill can also improve the agility ability of badminton athletes.

Training to improve agility is very rarely done, therefore the agility of the athletes is not very good. Therefore if badminton athletes do not have good agility it will be a problem for them (Wira Yudha Kusuma, 2015). Other research explains that the movement in badminton games that contains elements of agility is during a long rally, when it is seen that the shuttlecock hit by the opponent leads to all corners of the field which forces the player to move, change direction, change position while still maintaining body balance to chase the shuttlecock and return it to the opponent with a good shot (Hadi Karyono & Sapto Paluris, 2022). To achieve high achievements, it should be supported by physical conditions such as agility, speed, strength, coordination, endurance, reaction time, flexibility, and power which are needed by athletes in badminton games, especially when in a match (He, 2020; Trihadi Karyono, 2016). Furthermore (Wiyanto et al., 2020) explained that optimal achievement in badminton can be achieved if the coaching program is carried out from an early age.

In improving the agility of badminton athletes, an agility training method and regular training are needed, one of which is shadow training. (Kehi & Kusuma, 2019) explain that shadow learning or shadow learning is doing movements like real, meaning that the perpetrator makes movements like he is playing badminton he moves to the front left, right, and back like chasing a ball and hitting both with a racket and without a racket with the techniques instructed by the teacher. Other studies also state that in shadow training the movement demands are also by the criteria of badminton games which require fast movement dynamically, moving back and forth quickly and precisely (Achmad Rifai et al., 2020).

Agility is one component of physical condition. An athlete must have a very good physical condition to get his best performance in achieving achievement. Therefore, physical condition must be very concerned, both by the coach and the athlete himself. Achieving achievement is certainly not easy, many things must be considered and have a qualified physique. To achieve high achievements, it should be supported by physical conditions such as agility, speed, strength, coordination, endurance, reaction

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time, flexibility, and power which are needed by athletes in badminton games (T Karyono, 2016; Frederick et al., 2020). (Labib Siena Ar Rasyid et al., 2023)explains that in badminton games the prominent components of physical condition are speed of movement, agility (agility), muscle explosiveness or muscle power, and general endurance (aerobic ability). Badminton players need to coordinate technical movements combined with high-speed footwork to increase the effectiveness of techniques and disrupt opponents in passive and unpredictable situations during matches (Son, 2023).

The need to have excellent physical condition is very important for athletes. (Alecsandri, 2014) explains that good physical condition will bring the player's performance to achieve maximum results because it is related to the training intensity process to hone his competence, and these results can also affect him when participating in a competition or championship.

From this explanation it can be explained that a very prominent component of physical condition is one of them agility, to get good agility requires an agility training method in badminton, namely shadow training. In this case, the shadow training method is a form of exercise carried out by imagining being in a game, and this proves that training like this can increase the agility of badminton players (Rahman & Warni, 2017). The next research explains that agility is not formed by itself but through a training process. Exercises to improve agility are quite diverse including Shadow badminton (Saputra, 2020).

Shadow training is the practice of moving in various directions and imagining it like being in a game. Shadow training is a form of exercise used to improve footwork (Saputra, 2020). Investigated the effect of shadow training and reported significant improvements in participants' ability to change direction quickly and respond to sudden stimuli (Ihsan et al., 2024). From this explanation, it can be explained that a very prominent component of physical condition is of their agility, through shadow training using a racket and shadow training using a shuttle cock can be used as the latest approach to improve agility for badminton athletes (Gunawan & Elfry, 2021). The purpose of this study was to determine the effect of shadow training methods using rackets and shadow training using shuttlecocks on increasing the agility of Badminton UKM athletes.

METHODS

This study uses an experimental method, to look for the effect of certain treatments on others in controlled conditions with the Two Group Pretest and Posttest Design research design as the research design. This research was conducted at UPI Badminton UKM which is located at the FPOK Padasuka Cicaheum Sport Hall. This research was conducted 16 times a meeting and was conducted 3 times a week starting from September 10 to November 29, 2020. The population in this study amounted to 32 athletes and the research sample was 12 athletes (6 men and 6 women) with purposive sampling as a sampling technique with the following criteria; (1) The sample is an athlete who is registered as a member of the student activity unit (UKM) badminton University of Education Indonesia. (2) The sample is an active group participating in every exercise carried out by UPI badminton UKM. (3) Have good enough experience in badminton games and matches. (4) Athletes who have participated in regional, and national inter-student matches. (5) Athletes who have won matches such as student leagues, bumi siliwangi open, PBC Unpad, and others. The instrument in this study used a 2-back badminton shadow test instrument with a test validity of 0.91 and a test reliability of 0, 85. (Pratama, 2015).

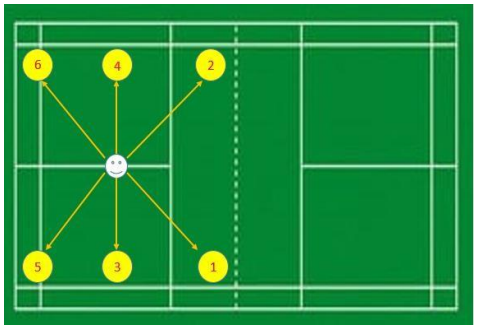

Figure 1. Shadow Test Instrument 2 Feedback

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Description:
: Order of points to be reached
: The point where the athlete starts and finishes the test

The data analysis technique in this study uses; (1) Test the normality of the research data using the SPSS software program with the Shapiro Wilk test. (2) Determine the comparison test using the SPSS software program. The data analysis used in this study is a paired t-test.

RESULTS AND DISCUSSION

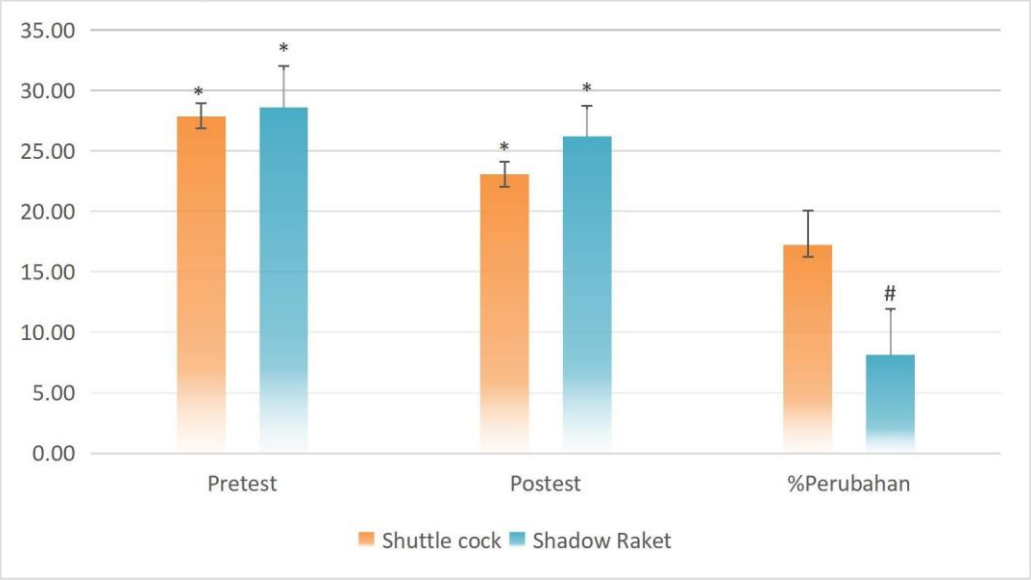
Results

Based on the results of research that has been conducted on the agility of shadow groups using rackets and shadow-using shuttlecocks through hypothesis testing can be explained in the table below:

Tabel 1. Changes in Pretest and Posttest Agility Results of Shadow Groups Using Racket and Shadow Using Shuttle cock

Group	Statistics	Pretest (second)	Postest (second)	p-value	%Gain
A	$\bar{X} \pm SD$	27.85±1.08	23.05±1.08	0.000[c]	17.22±2.87
n=6					
B	$\bar{X} \pm SD$	28.61±3.44	26.20±2.54	0.006[d]	8.15±3.78
n=6					
p-value		0.423[a]	0.019[b]		0.001[b]

Description:
A : Treatment shadow using shuttle cock
B : Treatment shadow using a racket
$\bar{X} \pm SD$: Mean and Standard Deviation
n : Number of Samples



Graphics 1. Changes in Pretest and Posttest Agility Results of Shadow Groups Using Racket and Shadow Using Shuttle cock

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Table 1 shows that the probability value of each training method is <0.05, meaning that both shadow training methods have a significant effect on increasing agility. But the shadow training method using a shuttle cock (group A) has a more significant effect compared to the shadow training method using a racket (group B). This can be seen in the table above which shows a value of 0.000 for group A and 0.006 for group B.

Discussion

Based on the results of calculations and data analysis that the authors do, both shadow training methods influence increasing the agility of badminton athletes. But the shadow training method using a shuttle cock has a better effect compared to the shadow training method using a racket. Research conducted by (Widhiyanti et al., 2022) also found that shadow shuttle cock training influences the agility of badminton athletes. Badminton shadow training in its description takes and puts the shuttle cock on the edges of the badminton court, and moves to imitate the shadow movements of the six corners of the field. Other researchers explain that in badminton games, the shadow form of exercise is one of the forms of exercise needed in the game as an effort to increase agility (Ishak et al., 2020).

The shadow form of training requires athletes to move in all directions (Achmad Rifai et al., 2020; Rahman et al., 2020). In this case, the shadow training method means shadow, so what is meant by shadow training in badminton is a form of exercise that is done by imagining being in a game, and this proves that training like this can increase the agility of badminton players (Rahman & Warni, 2017; Ihsan et al., 2023). The next research explains that agility is not formed by itself but through a training process. Exercises to improve agility are quite diverse including shadow badminton (Saputra, 2020). Furthermore (Kasran Maulana et al., 2023) explain that shadow training is a movement that regulates body steps to achieve a body position that makes it easier for players to hit the ball in the right position. Badminton playing skills are obtained from several factors such as mastery of a player's playing techniques and good footwork. The basic techniques that must be mastered by a badminton player include: stance (stance) racket holding techniques, ball striking techniques, and footwork techniques. In this badminton game, basic footwork techniques must be mastered, because this will help in increasing the agility of a player, light and flexible footwork will make it easier for someone to move towards the shuttlecock (Arnando et al., 2023). Footwork techniques require balance, agility, flexibility, and good coordination (Suharto, 2019), (Yu & Mohamad, 2022). In badminton, explosive jumping movements and short-distance sprinting are the most dominant elements (Liu & Wang, 2023), (Rathod et al., 2023).

Therefore, to achieve high results, coaches need to build a footwork training system to assess the ability to move faster, not only contributing to improving performance in competition but also gradually improving the effectiveness of badminton athletes' physical fitness (Son, 2023). In the shadow badminton movement, of course, it will involve knee bending at the lower extremities. (Yu et al., 2021) argue that knee-bending movements in badminton usually manifest as unilateral movements with the upper and lower extremities on the same side (depending on the dominant right or left limb).

From the results of calculations and data analysis, it can be seen that these two training methods affect increasing agility. Where the pretest and posttest values between each training method have a significant difference with a p-value for the shadow training method using a shuttle cock of 0.000 and shadow using a racket of 0.006 and this value is smaller than 0.05. However, the shadow training method using a shuttle cock has a more significant effect compared to shadow training using a racket.

CONCLUSION

Based on the results of research, calculations, and data analysis, the authors can conclude the comparison of shadow training methods using rackets and shadow training using shuttle cock to increase the agility of UPI Badminton UKM athletes. Where there is a significant effect on increasing the agility of UPI Badminton UKM athletes with shadow training methods using rackets, and there is a significant effect on increasing the agility of UPI Badminton UKM athletes with shadow training methods using shuttle cock, and there is a difference in influence between shadow training methods using rackets and shadow training using shuttle cock on increasing the agility of UPI Badminton UKM athletes.

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This research was conducted in a small sample size, so this research cannot be generalized. So, further research needs to be done with a larger sample so that the results of the study can be generalized, especially in badminton sports.

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