

The Effect of Footwork Exercise on Agility in Badminton

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ABSTRACT

This study aims to determine how much influence of footwork exercises on agility in badminton games. The method of this study was an experiment. Experiments were carried out 16 times with 1 pre-test and 1 post test. Population of this study was 10 athletes of PB Bina Tangkas. All populations were used as samples of this study by using total sampling. Data analysis used normality test with Liliefors test and t test with a significant level of 0.05. The results of this study shows that there was an effect of footwork training on agility in badminton games with $t_{count} (16.0) > t_{table} (1,833)$.

Keywords: Footwork exercise, agility, badminton

1. INTRODUCTION

Sports have become a necessity for humans, no wonder, this phenomenon we encounter today, it may be in the morning, in the afternoon or even in the evening. People do sport activities. One kind of sports they do is badminton. In recent decades, badminton games have become familiar to public. It turned out that the supporting factors in the development of this game were inseparable from several matches which are often shown through mass media such as television.

Badminton (in Bahasa Indonesia namely *bulu tangkis*) is often abbreviated as *bultang* or badminton essentially is a game that faces one on one or double versus double, using a racket and shuttlecock as a game tool, which is individually played on a closed or open air field with a flat field made of concrete floors, wood or carpet is marked by a line as a boundary and the net in the middle of the field (Subarjah: 2009). In this case, one of the most important components that can support in badminton games is agility. Agility is the ability of a person to be able to change the direction and position of the body movement quickly and precisely without losing balance (Harsono, 2004). This is such the most important parts of this game, because movement needs agility to produce various techniques and it is good and right as well as more accurate.

Jian (2000) states that at speed there are two things that underlie the speed itself, namely the speed of movement and the speed of reaction. Such capabilities require a prime component of coordination and training is needed to gain agility that can enhance these components. To improve various components, various forms of exercise can be applied which include footwork exercises (sedo instructions). Footwork exercises (sedo instructions) can be done by a coach to the athlete by applying the movements of eight compass

roses and the trainer as instructed. The instruction contains an order, each athlete is able to move in a certain direction according to the instructor's instructions. The main goal is to take control the field (Subarjah: 2009). The form of the exercise is in the form of exercises that can be more domiciled with the speed of movement (running the deer steps) and coordination of other body parts in reaching and taking control the field in all directions in a short time (Muhajir: 2007). In addition, according to Sutrisno and Khafidi (2010) state that there are some exercises to improve the agility, they are: shuttle run, zigzag run, standing squat training and reaction exercises.

In fact, especially as long as the writer do the observations in PB. Bina Tangkas, the writer found the problems in the game of badminton among athlete, namely: lack of footwork, footwork (movement of the foot) is a step movement that regulates the body to place the position in such a way that makes it easier to hit the shuttlecock according to its position (Subarjah, 2009). Lack of footwork in badminton games can be an infective of player's movement, so it will be difficult for the player to get a good performance or often not able to finish the game well.

Based on the explanation above, there is a significant effect between footwork and agility training in badminton games. To find out some effects of footwork training on agility in badminton games, the writer conducted a study of measurements of PB Bina Tangkas athletes by using a foot test as an item of the test.

The results of these measurements, the writer explained into the form of research results entitled "The Effect of Footwork Exercises on Agility in Badminton Games of PB. Bina Tangkas athlete Rumbai.

2. METHOD

In accordance with this objective, namely to find out the effect of Footwork training on Agility in badminton games, this study used the experimental method. Thus the experimental research method can be interpreted as a research method used to find the effect of certain treatments on others in a controlled position (Sugiyono, 2008).

Because this study did not use a control group, this study used the one-group pretest-posttest design approach. In the design there is a pretest, before giving the treatment. Thus the results of treatment can be known more accurately, because it can compare with the conditions before treatment given (Sugiyono, 2008). This design is described as follows:

- O1 = Pretest value (initial test / before given training)
 - X = Treatment
 - O2 = Posttest value (final test / after being given training)
- Effect of training on athlete achievement = (O2-O1)

The population of this study was all athletes of PB Bina Tangkas Rumbai which is as many as 10 students. Sample is part of a population that has certain characteristics or conditions that will be examined, Akdon and Riduwan (2005). However, given the small population, the entire population of the study was sampled (total sampling). First, the data taken by using agility on the badminton before footwork training. The data was taken from all samples that will be examined to determine the initial abilities of each athlete. Footwork training was done 3 times a week for 16 weeks. In the time of the exercises, the athletes do footwork in accordance with the exercise program that has been implemented by taking a minute break. Post test is done after students do footwork exercises for 16 meetings. The data was taken from all samples that will be studied to find out the agility improvement. The source of data were PB Bina Tangkas athletes, Rumbai. This study aims to measure the speed of agility footwork by measuring the foot test (Khairuddin: 2000). This test aims to regulate agility in badminton games. The instruments used are the field of badminton, net (nets), duct tape or color chalk, stopwatch, whistle.

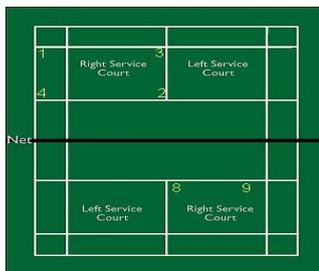


Figure 1. Field for Foot Test.
Source: (Khairuddin: 2000)

The Implementation Guide

Testee is in the middle of the badminton court area, in front and back side the field there are two boxes, the box in the front of the field with a rectangular shape (number 1) measuring 1 m wide and 1.5 m long, and the box at the backside of the field (number 2) is 1.15 m wide and 1.15 m long.

Scoring method

The command... ready ... "yes" the testee steps forward, so that one of the testee's legs enters the box in front side (number 1). After stepping the testee's feet backwards, so, one leg goes into a rectangular box (number 2) in the right back side. When one of the legs, especially the left foot, the testee makes a hitting motion by jumping so that it will land with the right foot position in front. After that the testee makes a move by stepping forward to the middle of the field. Next the testee moves back by stepping forward until one of the legs enters the rectangular box (number 1) the left front side, then moves back to the middle position. Next back towards to the box (number 2) to step one foot into the box with a hitting motion. This is done for 30 seconds continuously. If testee can set one foot in the box, it means that you have counted 1, 2, 3 and so on. If the testee's foot only touches the line and does not enter it means invalid, so it is not counted. At the end of the implementation, the value achieved by the testee is then matched to the list of agility assessments.

Table 1. Assessment of Footweight test.

SCORE	CAPABILITY	CAPABILITY VALUE	FINAL SCORE
24 – 35	Very good	90 – 100	A
21 – 23	Good	80 – 89	B
19 – 20	Average	70 – 79	C
16 – 18	Deficient	60 – 69	D
13 – 15	Meager	50 – 59	E

In technique of Data analysis, data obtained as individual scores processed by using statistical procedures to prove whether the hypothesis that writer submitted in this study was accepted or rejected. Data collected from pretest and post test were analyzed by using normality and t-test.

3. RESULTS AND DISCUSSION

Description of assessment data, data taken through tests and measurements of 10 sample athletes of PB. Bina Tangkas Rumbai. The variables in this study were footwork exercises symbolized by X as independent

Data	Posttest
Sample	10
Mean	20,1
Max	22
Min	18
Standard Deviation	1,66
Variant	2,77
Sum	201

variables and agility symbolized by Y as the dependent variable.

Data on the results of the front-back footwork pretest

The results of the front rear footwork pretest data are as follows: highest score 19, lowest score 15 with an average of 16.9, standard deviation of 1.52 and variance of 2.32, distribution of frequency can be seen in the following table:

Table 2. Data Analysis of Frontrear Footwork Pretest.

Data	Frequency	Percentage
15	2	20,00
16	3	30,00
17	1	10,00
18	2	20,00
19	2	20,00
Amount	10	100

Table 3. Pretest Data Frequency Distribution of Front rear Footwork.

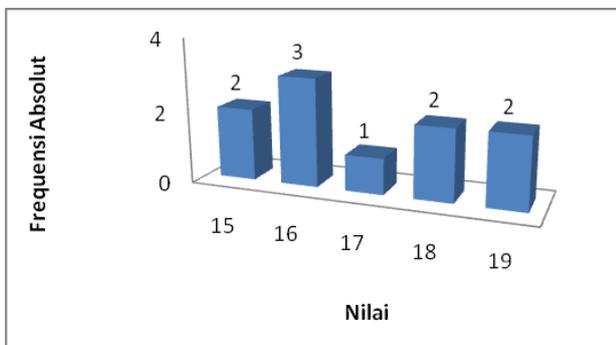


Figure 2. Pretest Footwork Front Rear Histogram.

The Result of the front rear footwork of PB Bina Tangkas athletes is as follows: highest score 22, lowest score 18 with average 20.1, standard deviation 1.66 and variance 2.77. Frequency of distribution can be seen in the following table:

Table 4. Data of Post test Analysis.

Table 5. The Result of Frequency Distribution

Data	Pretest
Sample	10
Mean	16,9
Max	19
Man	15
Standard Deviation	1,52
Varian	2,32
Sum	169

of Pretest.

Data	Frequency	Percentage
18	3	30,00
19	0	00,00
20	3	30,00
21	1	10,00
22	3	30,00
Amount	10	100

Analysis requirements testing is intended to test the pre-assumptions used as the basis for using variance techniques of analysis. Assumptions are analyzed data obtained from samples that represent populations with normal distribution and groups compared to those originating from homogeneous populations. For this reason, the test used is the normality test.

The normality test was carried out by Lilliefors test with a significant level of 0.05 with the results of the requirements testing as follows: The normality test was carried out by Lilliefors test, the results of the normality test on the research variables, namely the results of Front Rear Footwork agility (pretest and posttest) can be seen in the following table :

Table 5. Test for Normality of Pretest and Post-test Data.

Variabel	L Arithmetic	L Table
Pretest Data	0,222	0,258
Posttest Data	0,198	0,258

From the table above, it can be seen that the pretest data after the calculation resulted in $L_{\text{calculation}}$ of 0.222 and L_{table} of 0.258. This means that $L_{\text{calculation}}$ is smaller than L_{table} . It can be concluded that the distribution of pretest data is normally distributed. For the posttest data results, $L_{\text{calculation}}$ 0.198 is smaller than L_{table} 0.258. It can be concluded that the distribution of posttest data is normally distributed.

The hypotheses tested in this study are:

H0: There is no significant effect between Footwork (X) training on results

Agility (Y) PB Bina Tangkas athletes, Rumbai.

H1: There is a significant effect between Footwork (X) training on Agility results

(Y) on PB. Bina Tangkas athletes, Rumbai.

The data obtained were analyzed descriptively, then the research hypothesis tested had been submitted according to the problem, namely: "there is a significant effect of Footwork training with the results of Agility (Y). Based on the t-test analysis produces t_{count} of 16.0 and t_{table} of 1.833. Means $t_{\text{count}} > t_{\text{table}}$. It can be concluded that H0 is rejected and H1 is accepted. It can be concluded that there is a significant effect between Footwork (X) training and Agility (Y) results in PB Athletes. Tangkas Rumbai in the alpha level of 0.05 with a confidence level of 95%.

The discussion, after conducting the research for 16 meetings which began with data retrieval up to data processing, finally, based on discussion the results as follows: Effects of Footwork (X) exercises with Agility results (front footwork test back) (Y) on PB Bina Tangkas athletes Rumbai, shows that there is a significant influence between the two variables above.

The result of Hypothesis test shows that there is an effect of Footwork training on Agility. It illustrates that the results of Agility affect of Footwork practice is needed to support the frequency when doing agility in playing badminton. To achieve the goals, a good training program is needed from a coach. Thus, the success of the objectives to be achieved will be influenced by the application of the principles of training in making the training program. One of them is Footwork training.

A good way to set foot (footwork) is absolutely needed by a badminton player. By setting a good foot, a player will be able to move as efficiently as possible in all parts of the field (James poole, 2011: 48). The form of implementation of this exercise: first, stands in the middle or in the middle of the badminton court (between the two midlines), then start with the dominant foot in the badminton game towards the corner according to the instructor's instructions.

Based on the results of the discussion of the above, it can be concluded that there is a significant effect of

Footwork training on Agility in PB Bina Tangkas Athletes Rumbaiin playing badminton.

4. CONCLUSION

Based on the findings and data analyzing, it can be summarized as follows: There is a significant effect between Footwork (X) training and Agility (Y) results in PB Bina Tangkas athletes Rumbai.

Before doing the t test analysis, the mean score is different (d) of 3.2, and produces a t_{count} of 16.0 and t_{table} of 1.833. Means $t_{\text{count}} > t_{\text{table}}$. It also can be concluded that footwork exercises affect the agility of PB Bina Tangkas Rumbai athletes.

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