

# The effect of SAQ training to increase the agility of badminton atheletes aged 12-13 years

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#### Abstract

This study aims to determine the effect of the SAQ training program on increasing the agility of PB badminton athletes. Bendo Sport aged 13-15 years. The athlete sampling technique used was a total sampling of 15 male athletes. The research instrument that researchers used in this study was the Illinois Agility Test. The research method used by researchers is one group pretest-post-test design. The results of calculating the data from the pretest and post-test obtained the following results, the mean pretest was  $17.44 \pm 0.59$  and the post test was  $16.34 \pm 0.52$ . In subsequent calculations, a significance value of <0.001 was obtained. It could be concluded that there were differences before training and after training.

Keywords: Speed; Agility; Quickness; Badminton

Received: 30 September 2023 Revised: 21 November 2023 Accepted: 23 November 2023 Published: 1 December 2023

#### **INTRODUCTION**

Badminton is a sport that is popular in the world, even many people who like badminton in the current era. Evidenced by the many small clubs in the village to the big clubs in the city. According to Zhang (2019) badminton is one of the favourite sports for college students. Badminton is a sport that practically can be done anywhere. According to Pardiwala et al., (2020) badminton is a popular sport in India with many medal prospects that will be followed at the 2020 Tokyo Olympics. Ghosh et al., (2020) argue that badminton is a popular racquet game that is featured in various global tournaments including the Olympics, World Championship, Asian Games, and many more. Badminton is a sport that consists of two or four people. Two people who are against each other are called singles and four people who are opposite each other are called doubles by hitting the shuttlecock to cross the net until the opponent cannot hit (Yuliawan, 2017). Hong et al., (2014) argue that badminton is a racquet sport that requires speed from the wrists, arms and legs, and badminton is also a non-contact sport. Tan et al., (2016) badminton is one of the most popular racquet sports in Malaysia, as well as in countries such as China, Indonesia, Korea and Denmark, among others. Badminton is a racquet sport played by two or four people, with a temporal structure characterized by actions of short duration and high intensity (Phomsoupha & Laffaye, 2015).

Everyone can play badminton, from an early age to adulthood (Bańkosz et al., 2013). Tamim (2017) explains that badminton is a game that has individual characteristics using several techniques. To play badminton well, you must be able to master the basic techniques first, namely service, smash, lob, drive, netting, dropshot and others. In playing badminton, apart from having good basic techniques, you also must have speed, agility, and flexibility (Yusuf, 2015).

Based on the experts described above, it can be concluded that badminton is a game played by two to four opposing people, and this game requires a strong physique and requires good playing strategies and qualified basic techniques, not only that, but badminton also requires speed, agility, and good reflexes to sustain a good game. To become a professional badminton athlete, you must master skills in badminton, from basic to complex skills. According to Budiwanto (2013) to gain skills and achievements, many factors must be formed for athletes, one of which is technique, tactics, physical, mental, and maturity to compete for this must be properly trained to achieve maximum performance.

To become a badminton athlete with many achievements, you must have good basic techniques in badminton. Under the guidance of a coach, it certainly makes athletes faster to develop their basic badminton skills. With diligent training, discipline, enthusiasm, and high hard work, athletes can be encouraged and accelerated to become even better. Apart from the basic techniques of hitting the shuttlecock that must be learned, footwork is no less important. Various kinds of exercises to improve good footwork steps include speed, agility, and reflexes.

According to Rizky et al., (2022) explaining that community efforts to develop the interests and talents of badminton are needed by training clubs. The badminton association is a place, container, or suggestion for developing the potential of athletes, especially in the sport of badminton. With so many clubs in various cities, it indicates that the development of badminton is very good, one of which is PB. Bendo Sport Mojokerto is in Mojokerto Regency. In today's era, many parents have talented children in sports, one of which is badminton. Currently, many people are enrolling their children in badminton clubs, so that their talents or hobbies can be channelled properly. Badminton school is a very appropriate place for young children to play sports they like and in badminton schools they can also gain knowledge and skills by means of physical training, mental formation, sportsmanship, and good mastery of basic badminton techniques.

Sajeed & Manikandan (2018) argues that leg strength is needed in badminton movements, both fast and slow, movements must be mastered even in fatigue conditions. According to Nando (2018) footwork in badminton is very important, because where the feet move, that's where the body will be carried. According to Kanagasabai & Lakshmanan (2018) SAQ training allows an athlete to have a high level of competence and to prepare for matches.

#### **METHOD**

In this study and based on the problems studied, this design uses an experimental design. This study aims to find out how the effect of SAQ training on the agility of badminton athletes in PB. Bendo Sport Mojokerto. The researcher used total sampling or saturated sampling, that is, the total population was used as a sample, amounting to 15 male athletes. Total sampling is a data sampling technique that uses all members of the population as samples (Sugiyono, 2016). The method used is an experimental research method to find the effect of certain treatments (Arifin, 2020). The type of research used by researchers in this research is descriptive quantitative research. This study used the one group pretest - post-test design method, namely, to find out the independent variables on the dependent variable.

O1XO2Pic. 1 Experimental Research Design Chart<br/>Source: (Sugiyono, 2016)

From the experimental research design chart above, it can be concluded that the flow of the experimental research design is to carry out an initial test before being treated by the researcher, carrying out an exercise treatment for 8 weeks, carrying out a final test after the experimental treatment from the researcher.

The athletes carried out the initial test in February and then continued with SAQ training for 8 weeks with a training frequency of 3 times a week (Bompa & Buzzichelli, 2015). SAQ training has 3 forms of training in each component of speed, agility, and quickness. As with speed, it has the form of two feet steps, wall drills, and partner resisted start exercises. For agility exercises such as carioca, in-out shuffle, and 180-degree turns. And quickness has the form of ball drop training with a partner, barrier jump with cut and sprint, and passing all direction. And after carrying out the SAQ training the athletes did the final test in April.

The instrument used by researchers in collecting data was the Illinois Agility Test with the results in the form of time achieved using a stopwatch. The test was carried out twice, namely before the SAQ exercise (pretest) and after being given the SAQ exercise (post-test).



Figure 2. Illinois Agility Test

Table 1 Date Description

	Table 1. Data Description				
Variable	Illinois Agility Test Pretest Results (second)	Illinois Agility Test Post Test Results (second)			
Highest Score	16.2	15.7			
Lowest Score	18.37	17.26			
Average	17.44	16.34			
Standard Deviation	0.59	0.52			
Standard Error	0.15	0.13			

## RESULTS

The table above shows the pretest and post-test sample data for PB athletes. Bendo Sport aged 13-15 years. On the initial test has an average or mean of 17.44. The average result of the initial test adjusted for the normative data value of the Illinois agility test is "average". And in the final test it has an average or mean of 16.34. The average result of the initial test adjusted for the normative data value of the Illinois agility test is "average".



Fugure 3. Illinois Agility Test Frequency Bar Chart

Score	Illinois Agility Test	Pretest	Post Test
Excellent	< 15.2	0%	0%
Good	15.2 - 16.1	0%	46.7%
Average	16.2 - 18.1	86.7%	53.3%
Fair	18.2 - 18.3	13.3%	0%
Poor	>18.3	0%	0%
	Sum	100%	100%

Table 2. Pretest and Post Test Data Results

Athlete data during the initial test, which gets an excellent percentage of 0%. Those who get a good percentage of 0%. Those who get an average percentage value of 86.7%. Those who get a fair value percentage of 13.3%. Those who get a poor percentage score of 0%.

Data obtained by athletes during the final test, which gets an excellent percentage of 0%. Those who get a good percentage score of 46.7%. Those who get an average percentage value of 53.3%. Those who get a fair value percentage of 0%. Those who get a poor percentage score of 0%.

Name	<b>T-Score Pretest</b>	<b>T-Score Post test</b>
Ridho	71.02	79.49
Daffa	59.66	75.76
Arya	58.98	76.78
Akbar	37.80	53.22
Tegar	43.56	69.49
Khafid	44.75	61.86
Dika	59.15	72.71
Favian	60.00	77.63
Ebyt	51.02	74.92
Akmal	50.17	62.03
Farid	41.19	59.49
Fahri	48.31	76.10
Darel	34.24	53.05
Doni	48.47	72.03
Dani	41.02	64.58

Table 3 T-Score Calculation Results

From the t-score table above, it shows that there is an increase in the athlete's score during the post test. From the number of samples used, the researchers used Shapiro-Wilk, namely 15 athletes, of which there were no more than 30 samples.

The results of the normality test obtained a significance of > 0.05, so the research data is normally distributed. So, from this decision, the research data is normally distributed.

From the statistical hypothesis, it is found that Ho = there is no difference in test scores before and after being given SAQ training, and Ha = there is a difference in test scores before and after being given SAQ training. According to the Ho test, Ho is rejected if the significance value is  $\leq \alpha 0.05$ . Based on the paired T-test table, a significance value of <0.001 was obtained. The significance value was less than 0.05, then Ho was rejected, and Ha was accepted, so SAQ training had an effect on agility on PB. Bendo Sport Mojokerto athletes.

## DISCUSSION

Based on the results of the initial test, the athletes who received scores matched the data obtained, namely more than half of the athletes received average scores and only a few athletes received fair scores. It can be concluded that in this initial test the agility of PB athletes. Bendo Sport is included in the "average" category. And then based on the results of the final test, almost half of the athletes got good grades and the other athletes got average scores. It can be

concluded that in this final test the agility of PB athletes. Bendo Sport is included in the "average" category. The results of the normality test obtained a significance value of > 0.05, so the research data is normally distributed. Based on the paired T-test, a significance value of <0.001 was obtained, which means that it is smaller than  $\alpha$  0.05, so SAQ training has an effect on agility on PB athletes. Bendo Sport Mojokerto. The percentage increase in agility of athletes using SAQ training reaches 6% in training time for 8 weeks.

Research on the SAQ training program has been carried out by several previous studies. As in Azmi & Kusnanik (2018), this study used SAQ training to increase agility and acceleration speed. The study used 8 weeks of treatment, and from the SAQ training program used by researchers it was proven to increase the speed, agility and acceleration of athletes.

In (Amar (2016) research, researchers used the SAQ program to increase the agility of PB Djarum badminton athletes. Researchers carried out the SAQ treatment program for 8 weeks. after the final test, it was found that the SAQ program increased the agility of athletes.

Chandrakumar & Ramesh (2015) used the ladder drill and SAQ programs to increase speed and agility in badminton clubs. In this study the ladder drill and SAQ programs were proven to increase the speed and agility of badminton athletes.

From the several studies above, it can be concluded that the SAQ program is proven to increase the agility of athletes. By balancing the enthusiasm of the athletes for training, the SAQ training program can significantly increase the agility of athletes.

### CONCLUSION

In conclusion, this study aims to see whether there is an increase in the agility of PB badminton athletes. Bendo Sport using the SAQ training program. In this study also used 2 tests, namely the pretest and post-test, which aims to find out whether there was an effect before and after training. After carrying out the pretest, training, and post-test with data calculated using SPSS, it can be concluded that the SAQ training program has an influence on the agility of athletes where there is a significant increase.

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