



## The Effectiveness Of The SAQ And 8-PSD Exercise Methods In Increasing The Reaction Speed Of Female Futsal Goalkeepers

Fathur Rizki Amelia<sup>1\*</sup>, Tatang Muhtar<sup>2</sup>, Dinar Dinangsit<sup>3</sup>

<sup>1,2,3</sup> Faculty of Physical Education and Health, Universitas Pendidikan Indonesia, Jl. DR. Setiabudi No.229, Isola, West Java Province, 40154, Indonesia

\*e-mail: [fathurrizki@student.upi.edu](mailto:fathurrizki@student.upi.edu), [tatangmuhtar@upi.edu](mailto:tatangmuhtar@upi.edu), [dinardinangsit@upi.edu](mailto:dinardinangsit@upi.edu)

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### Abstract

The goalkeeper is the player in the last line of the futsal game and must have good reaction speed. Training methods can provide an improved reaction. Methods such as SAQ and 8-Point Star Drill are expected to increase the hand reaction of the female futsal goalkeeper. This study uses a 2x2 Factorial research design. The 2x2 factorial modifies the posttest-only control group or pretest-posttest control group design. The sample used for this study was 28 female futsal goalkeepers from Cirebon U-23 with a purposive sampling technique. The training method data shows a sig value of 0.007 for the effect of the exercise method on reaction speed. The interaction between training methods and the average reaction speed of female futsal goalkeeper U-23 Cirebon shows that the Sig value is 0.019. The comparison between 8-Point Star Drill and SAQ is above the average, with a Sig value of 0.998 and a Sig value of 0.004 for below average. So that the goalkeeper could increase the reaction speed of the female futsal goalkeeper Cirebon U23, she was able to be given SAQ and 8-point star drill.

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✉ Alamat korespondensi: Jl. Dr. Setiabudhi No.29, Isola, Kec. Sukasari, Kota Bandung, Jawa Barat 40154

E-mail: [fathurrizki@student.upi.edu](mailto:fathurrizki@student.upi.edu)

## INTRODUCTION

Exercise can make people sweat and make people healthy. In general, activities that improve one's body and mind are often referred to as sports (Rulianto et al., 2016). By

exercising regularly, regularly and regularly, a person can maintain his physical fitness so that he remains in prime condition (Mursyid et al., 2016; Ramadan, 2017). Big ball games such as futsal, soccer, basketball and volleyball. There is also futsal, a sport that is now in great

demand by people both in rural areas and in cities, for example playing big ball. It is undeniable that futsal is currently booming in Indonesia. We can see many futsal fields popping up around us. The futsal field is packed with people playing futsal from evening to night.

Futsal is a very popular sport in Indonesia, as evidenced by the many international and national standard Futsal field rental services in urban and rural areas. According to (Mulyono, 2014), futsal is a sport similar to football, only the field is smaller than soccer. Futsal is a team game where each team consists of 5 players, one of which is the goalkeeper or goalkeeper, and one of them is the goalkeeper. Futsal is a soccer game with a small field and goal, usually played in a large room, and each team consists of five players (Royana, 2017). Futsal consists of 5 players: pivot, flank/style, anchor and goalkeeper (Darniyati et al., 2018). These five players play an essential role in the futsal game scheme in defence and attack.

The goalkeeper is the player on the area's last line. This position is different from other positions because it can block the ball with all parts of its body from attacks by opposing players. In defensive situations, especially when defending a goal (such as 1-on-1s and shots on goal), the goalkeeper's movements usually need to be explosive, quick-thinking and technical, and essential with "agility" as one of the fundamental qualities of the modern goalkeeper (Knoop et al. al., 2013; Ramadan et al., 2020). (Fadi &

Sutresna, 2019) argues that five abilities must be possessed, especially for futsal goalkeepers: fundamental speed, fast reaction, general strength, flexibility and alertness. Four of the five abilities that goalkeepers must have are physical components: fundamental speed, fast reaction, general strength and flexibility.

Reaction speed and reflexes are essential for futsal goalkeepers because the smaller the goal, the goalkeeper does not need to fall, jump far or jump high. However, the key is that the goalkeeper must have fast reflexes. Reaction speed is the minimum time required to provide a kinetic response after receiving a stimulus (Budianto, 2015; Ramadan & Iskandar, 2018). Reaction speed is necessary to gain significant speed when eliminating the goalie's ball. Reaction speed is the receipt of stimuli to provide answers in the shortest possible time.

As it is known that futsal is not only played by boys but also played by women or women (Rico-González et al., 2022; Söğüt et al., 2022). Currently, futsal is favoured by women or women's teams who want the same achievements as male futsal players. Every region now has women's teams ready to compete to become champions. Moreover, in every region in Indonesia, especially in Cirebon, women's futsal is one of the attractions in the world of futsal, giving birth to talented players. Not only that, but women's futsal goalkeepers also have talents that can be developed into professional goalkeepers.

However, what happened to futsal goalkeepers in the City and Regency of

Cirebon? Women's futsal goalkeepers still needed the reaction speed to block the ball coming at them. This can be seen during futsal tournaments between sub-districts, between clubs, futsal tournaments between schools throughout the City-Cirebon Regency, and then during the 2021 BK Porprov, which was held in Subang Regency, West Java. When she was a goalkeeper, most of the girls' goalkeepers only moved without hand reflexes that could block the ball, and most of the time, they just dropped their bodies to block the ball. In fact, using the reaction speed of the hands alone can block the ball and make the team's goal safe.

With the condition of the goalkeeper described above, futsal goalkeepers must be given training methods to improve hand reactions. The method given must make the goalkeeper's ability to react to the maximum and be able to secure the goal from the incoming ball. The method provided by the trainer must be in accordance with the objectives to be completed so that the objectives of the training provided are achieved. Methods such as SAQ (Speed, Agility and Quickness) and 8-Point Star Drill are expected to improve the hand reaction of the women's futsal goalkeeper. According to (Apriliyanto, 2020), the SAQ or (Speed, Agility and Quickness) training method itself is a form of training that combines speed, agility, and accuracy in responding to stimuli and non-stimuli. In addition, the 8-Point Star Drill training method, according to Kurniawan (2013), is a training method by forming an

octagon. This exercise is often done to improve the reaction of futsal goalkeepers. By using the SAQ Training Method and the 8-Point Star Drill, it is expected to be able to solve this problem.

## **METHODS**

The experimental method is used, where the experiment is a method of testing an idea (or practice or procedure) to determine whether the idea affects the result or the dependent variable (Creswell, 2015). This study used a 2x2 Factorial research design. Factorial designs expand the number of relationships examined in experimental research. The 2x2 factorial is basically a modification of the posttest-only control group or pretest-posttest control group design (Ramadan & Juniarti, 2020).

In this study, the population was used, namely female futsal goalkeepers in Cirebon City and Regency, with a total sample of 28 female futsal goalkeepers. This time the test uses a research instrument, namely the Whole Body Reaction Test Type II. The whole body has a function: measuring the reaction time of the hands and feet with visual or auditory stimulation.

This instrument will assess the reaction of the hand to visual stimulation. How to do the Whole Body Reaction Test Type II (Syaquro, 2016) is for the sample to sit comfortably in a chair with a button for the test. Upright body position with straight eyes facing the stimulus unit. When the tester

presses the button, a light stimulus comes out and the sample presses the available button. Do it three times. Scores are taken from the

best time. According (Hendriawan, 2014) states that the test norms are as follows:

Table 1. Table of Test Norms

Category	Score
Special	0.001 – 0.100
Very good	0.101 – 0.200
Good	0.201 – 0.300
Fair/Moderate	0.301 – 0.400
Not enough	0.401 – 0.500
Less Once	0.501 – up

*(The unit for this tool is seconds)*

### FINDINGS AND DISCUSSION

In this first test, we wanted to test the difference in effect between the SAQ training method and the 8-Point Star Drill on the reaction speed of the hands of the U-23 Cirebon women's futsal goalkeeper. Hypothesis testing in this study was carried

out using a two-way ANOVA test of variance assisted by SPSS v.20 software. This two-way ANOVA analysis of variance aims to determine the difference in effect between the SAQ training method and the 8-Point Star Drill on the reaction speed of the U-23 female futsal goalkeeper Cirebon's hands.

Table 1. Uji Two Ways ANOVA

*Tests of Between-Subjects Effects*  
*Dependent Variable: NGain*

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	.148 <sup>a</sup>	3	.049	7.638	.001
Intercept	1.408	1	1.408	217.778	.000
Method_Practice	.057	1	.057	8.865	.007
Results	.050	1	.050	7.705	.011
Method_Practice * Result	.041	1	.041	6.345	.019
Error	.155	24	.006		
Total	1.711	28			
Corrected Total	.303	27			

a. R Squared = .488 (Adjusted R Squared = .424)

The interpretation above shows that the Corrected Model data shows a sig value of  $0.001 < \alpha 0.05$ , which means that all the

independent variables have an influence on the dependent variable. The training method data shows a sig value of  $0.007 < \alpha 0.05$ , so there is

an influence of the training method on the reaction speed of the hands of the u-23 Cirebon women's futsal goalkeeper. This means that H0 is rejected and H1 is accepted, so there is a difference in the effect of the 8-point star drill training method and the SAQ method on the reaction speed of the Cirebon u-23 women's futsal goalkeeper. Thus the research questions and hypotheses are by the research results.

The second test was to determine the interaction between training methods and the average level of the reaction speed of the U-23 Cirebon women's futsal goalkeeper. Based on the calculation results of the two-way ANOVA analysis in the previous table regarding the interaction between training methods and the average level of reaction speed for the u-23 Cirebon women's futsal goalkeeper, it shows that the Sig value is  $0.019 < \alpha 0.05$ . This means

that H0 is rejected and H1 is accepted, so it can be stated that there is an interaction between the training method and the average level of the reaction speed of the Cirebon u-23 women's futsal goalkeeper. The results of this study are by the research questions and hypotheses, then to find out which one has a more significant effect, further tests must be carried out using the Tukey test.

In the next test, the researcher wanted to know the difference in reaction speed between female goalkeepers who were given training using the SAQ and 8-Point Star Drill training methods in the group of women who had high hand reaction speed. Further tests can be carried out using the Tukey test; data from the Tukey test results can be seen in the table below.

Table 3. Post Hoc test above average

Multiple Comparisons				
Dependent Variable: Training_Data				
Tukey HSD				
(I) Post_Hoc	(J) Post_Hoc	Mean Difference (I-J)	Std. Error	Sig.
8 Point Star Drill above average	SAQ is above average	-.008	.043	.998

Based on observed means.

The error term is Mean Square(Error) = .006.

\*. The mean difference is significant at the 0,05 level.

Comparison between the 8-Point Star Drill above the average with the SAQ above the average, which has a Sig value of  $0.998 > \alpha 0.05$ , so it can be concluded that there is no

difference between the 8-Point Star Drill method and the SAQ method in the group with above average reactions flat. Thus the results of the research on the third hypothesis for the

hand reaction speed of the female futsal goalkeeper Cirebon u-23 are not in accordance with the questions and research hypotheses that have been determined previously.

Table 4. Post Hoc test below average

Multiple Comparisons				
Dependent Variable: Training_Data				
Tukey HSD				
(I) Post_Hoc	(J) Post_Hoc	Mean Difference (I-J)	Std. Error	Sig.
8 Point Star Drill above average	SAQ is above average	-.16701 *	.043	.004

Based on observed means.  
 The error term is Mean Square(Error) = .006.  
 \*. The mean difference is significant at the 0,05 level.

For the final test, the researcher wanted to know the difference in reaction speed between students who were given training using the SAQ and 8-Point Star Drill training methods in the female group who had low hand reaction speed. Further tests can be carried out using the Tukey test, a comparison between the 8-Point Star Drill below the average and the SAQ below the average, which has a Sig value of  $0.004 < \alpha 0.05$ , so it can be concluded that there are differences between the 8-Point Star Drill method and the SAQ method in the group with the reaction speed of the female futsal goalkeeper below average. Thus the results of the research on the fourth hypothesis for hand reaction speed of the Cirebon u-23 women's futsal goalkeeper are in accordance with the questions and research hypotheses that have been determined previously.

## CONCLUSION

Goalkeepers are players in the last row in futsal games who can block incoming balls. A training method is used in this exercise, namely the SAQ (Speed, Agility, and Quickness) Method and the 8-Point Star Drill. Both of these methods are believed to improve the reaction of goalkeepers who have above-average and below-average reaction abilities. In the difference in the effect of the two methods, the calculation results show a sig value of  $0.007 < \alpha 0.05$  so that there is an influence of the training method on the reaction speed of the hands of the u-23 Cirebon women's futsal goalkeeper. Then in the interaction of the two methods with hand reaction speed, the interaction between the training method and the average level of reaction speed for the u-23 Cirebon women's futsal goalkeeper showed that the Sig value was  $0.019 < \alpha 0.05$ .

Then the difference between the two methods of reaction speed is above the average;

the comparison between the 8-Point Star Drill is above the average with the SAQ above the average, which has a Sig value of  $0.998 > \alpha$  0.05, so it can be concluded that there is no difference in the 8-Point Star method Drill with the SAQ method in groups with above average reactions. Thus, these two methods are suitable for female futsal goalkeepers to increase the reaction speed of their hands. However, the third hypothesis did not show satisfactory results for above-average reaction rates.

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