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The Effect of Rubber Training on Gyaku-Tsuki Punching Speed in Karate Athletes

Nava Oktavia*, Naluri Denay, Desi Purnama Sari
Universitas Negeri Padang, Indonesia
*Corresponding Author: navaoktavia1310@gmail.com

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Abstract
Background and aim. Speed is one aspect of physical performance that reflects the muscle's ability to act quickly through cycles of contraction and relaxation. In karate, punching speed is essential for achieving points, particularly in the gyaku-tsuki chudan technique. This study aims to evaluate the effect of rubber training on gyaku-tsuki punch speed among karate practitioners.
Methods This study used a descriptive research method. The sampling technique employed was total sampling, involving 12 karate athletes. Data were collected using the gyaku-tsuki punch speed test.
Results. The results indicate a significant effect of rubber training on gyaku-tsuki punch speed. The calculated t value was 7.05, which exceeds the t-table value of 1.83 at a significance level of $\alpha = 0.05$ with degrees of freedom ($df = 9$).
Conclusions. Rubber training has a significant impact on improving gyaku-tsuki punch speed among karate athletes.

Keywords: *Gyaku-Tsuki; Karate; Rubber Training.*

1. Introduction

Karate is a martial art that originated in Okinawa, Japan in 1869 when it was first demonstrated as Tea or Okinawa-Te. In 1929, several prominent figures from Okinawa introduced their special style of karate to Japan. For example, Kenwa Mabuni popularized his style as Shitoryu, Choyun Miyagi introduced Gojuryu, Ghichin Funakoshi popularized Shotokan, and Othsuka Hironori introduced Wadoryu. (Dr. Wasis D. Dwiyogo, 2019).

In general, karate involves the use of both offensive and defensive use using only hands and feet. The strikes are carried out in straight and horizontal movements, with punches that resemble punching techniques, as well as kicks that are structured in various styles. Training in karate is a process of sports activities that are carried out consciously, organized, gradually, and repeatedly over a long period of time, with the ultimate goal of achieving optimal improvement in performance (Ginayah et al., 2022).

Karate, similar to other sports, requires mastery of basic techniques. Proficiency in this technique has a significant impact on the performance of karate athletes. The outcome of a match, whether an athlete wins or loses, depends on skill and mastery of those techniques. (Purnama, 2016). According to Simbolon, (2014) The basic method of karate is divided into three main parts. First, kihon, focus on basic techniques such as punches, kicks, and dodges. Second, the word, is used to train movements specifically. Third, kumite, focuses on matches or skill training exercises. One way to improve your stroke speed such as gyaku-tsuki and kizami-tsuki is to use an elastic tool while practicing. This is in line with the findings of Same, (2021) which states that practicing strokes with rubber tools provides positive benefits in increasing the average speed of strokes in karate. This is due to the stimulation provided by the rubber device which has the potential to trigger physical and anatomical changes in the muscles. This change ultimately has an impact on increasing physical potential, especially in increasing the speed of the shot. .

One of the punching techniques in karete is Gyaku Tsuki Chudan. Gyaku Tsuki Chudan is a punch technique that is directed towards the

opponent's abdomen using the hand opposite the position of the foot. The gyaku tsuki attack is performed in a stable and sturdy stance position, providing a strong push towards the target. This movement involves a hip rotation that is maintained at a high level without change as it rotates, while the center of gravity is slightly shifted forward (Manullang et al., 2014).

Rubber exercise is an effective and portable sports equipment made of elastic rubber material. It comes in a variety of different forms of elasticity and is used to train muscle strength and endurance. The elasticity in this tool refers to the ability of a material (such as rubber) to return to its original shape quickly after the external force affecting it is removed Top

In sports activities, speed has an important role in punching, kicking, throwing, jumping, quick attacks, and other activities. In the context of Karate, speed is considered a very vital physical element. Therefore, stroke training is expected to increase speed in performing stroke techniques in Karate sports practice (Matutu et al., 2019).

Based on the observations of researchers, it can be seen that many athletes are still not proficient in performing gyaku-tsuki punches. Common mistakes made by many athletes include the inability to accurately direct the punch at the intended target. Therefore, a special approach is needed that aims to increase the speed of gyaku- tsuki punches in karate athletes. One method that can support karate athletes in increasing the speed of gyaku-tsuki and kizami-tsuki punches is the use of exercises with rubber tools.

2. Method

The type of research that will be used in this study is descriptive research carried out at FIK UNP. Sampling used the total sample technique, which involved 12 people as research subjects. The purpose of this study is to obtain primary and secondary data. Primary data is information obtained directly by the researcher from samples through tests, while secondary data is information taken from athlete biodata. The instrument used is a test to measure the speed of the gyaku-tsuki and kizami-tsuki punches. Data analysis was carried out by looking for relative frequency and percentage.

3. Result

The results of a series of field studies that examined the effect of rubber training on gyaku-tsuki stroke speed in karate athletes resulted in research data consisting of the results of the gyaku-tsuki stroke speed pretest before the subject underwent rubber training, and posttest data taken after the subject underwent rubber training as a treatment.

Table 1. Gyaku-Tsuki Punch Speed Pretest and Posttest Results

No	Name	Pretest (X1)	Posttest (Y1)
1	AE	40	48
2	AXLE	30	36
3	BA	26	31
4	BF	40	47
5	BS	34	40
6	CI	37	45
7	DA	38	45
8	FI	40	47
9	JR	45	53
10	MR	40	47
11	NA	35	41
12	SA	36	42
Total		**441**	**522**

From the table above, it can be noted that the total number of gyaku-tsuki stroke speed scores in the pretest stage is 441, while in the posttest stage it is 497.

a. Calculation of average value

From the results of the calculation, it can be concluded that the pretest data of gyaku-tsuki punch speed from 12 karate beginner athletes at the Cantik Manis Dojo has an average value of 36.75.

From the results of the calculation, it can be concluded that the gyaku-tsuki stroke speed pretest data from 12 karate beginner athletes has an average value of 36.75. Meanwhile, the average posttest score was 43.5.

b. Calculation of Deviation Standard Value

From the calculation results, it was found that the standard deviation value of the pretest data of the athletes' gyaku-tsuki punch speed was 5.08 and the posttest data of the gyaku-tsuki punch speed on the athletes was 5.91.

c. Average Difference Test (T.test)

Based on the calculation of the Average Difference test, a t-table value with a degree of freedom of 9 at a significance level of $\alpha = 0.05$ was obtained at 1.83. The results of the analysis show that t-count = 7.05, which exceeds the value of t-table = 1.83. This indicates a significant effect of rubber training on the speed of gyaku-tsuki punches in karate athletes. Thus, it can be concluded that the use of rubber exercises in karate athletes is effective in increasing the speed of gyaku-tsuki strokes.

Discussion

From the results of analysis and data processing on the effect of rubber training on gyaku-tsuki stroke speed in karate athletes, it was found that there was a significant effect of rubber exercise on gyaku-tsuki stroke speed in karate altet.

Speed ability is one of the important factors needed in certain sports disciplines. Speed refers to the ability to perform a series of similar movements in sequence in the shortest possible time, or the ability to cover a certain distance in the shortest possible time (Anggoro, 2017).

The gyaku tsuki attack is one of the most important aspects of the technique in the practice of karate martial arts. Gyaku Tsuki refers to an attack that is carried out by cutting off the opponent's attack or facing the opponent's attack towards the middle of the body, towards the heartburn. In this technique, the hand that is hitting the punch moves in the opposite direction to the foot, while the hips are rotated to get the maximum force on the punch. Gyaku Tsuki Chudan became one of the dominant blows in the practice of kumite karate, along with other blows such as Oi-Tsuki Chudan, Oi-Tsuki Jordan, and uraken. As many as 70% of the overall techniques in karate rely heavily on punches as one of the most effective weapons. Therefore, it is important for a karateka to have excellent punching techniques in order to score points or gain an advantage in a fight (Azmi, 2016).

This research is in line with Ginayah et al., (2022) Where rubber training has an increased impact on gyaku tsuki punches on karate athletes. There was a significant increase in the results of the influence of rubber training on gyaku tsuki punching techniques in karate athletes. The same thing was also expressed by Pranata et al., (2019) The results of statistical analysis of the data showed that hitting exercises using rubber tires had a more effective and significant impact on increasing the speed of Kumite Gyaku Tsuki's punches. This is shown by the t-count value of 21.64, while the t-table value with a significance level of 5% is 2.00.

4. Conclusion

Based on the results of the above study, it can be concluded that rubber training has a significant impact on the speed of gyaku-tsuki punches in athletes. Keywords: rubber training, *gyaku-tsuki,* karate.

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