

## RESISTANCE BAND TRAINING ON THE GYAKU-TSUKI PUNCH SPEED OF FEMALE KARATE ATHLETES AT THE LEMKARI DOJO

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### Abstract

Based on field observations when the female karate athletes of the Lemkari dojo of Teluk Kuantan City participated in the championship, there was still a lack of speed in their gyaku-tsuki punches, which made their punches often blocked by their opponents. This problem is thought to be caused by several factors, including the lack of resistance band training on punch speed. This study is an experimental study that aims to calculate the effect of resistance band training on the speed of gyaku-tsuki punches of female karate athletes of the Lemkari dojo of Teluk Kuantan City. The population of this study was 30 female karate athletes of the Lemkari dojo of Teluk Kuantan City. The sample in this study was 15 people. In this study, the One group Pretest-Posttest Design was used, the research instrument used the gyaku-tsuki speed test, the data analysis technique used the normality test (liliefors) and hypothesis testing (t test) with a significant level of  $\alpha = 0.05$ . The results of this study are that there is an effect of Resistance Band training on the speed of gyaku-tsuki punches in female karate athletes at Dojo Lemkari Kota Jalur with an average score of 37.66 in the pre-test, and an average score of 45.66 in the post-test. This is proven significantly, where after the "t" test, the results of  $t_{count} = 1.322 < t_{table} = 1.761$  are obtained. So the hypothesis  $H_a$  is accepted and  $H_o$  is rejected. The conclusion with Resistance Band training is that there is a change in the speed of gyaku-tsuki punches of Dojo Lemkari Kota Jalur athletes.

**Keywords:** Resistance Band; Athlete's Punching Ability

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### INTRODUCTION

The development of sports in Indonesia is currently experiencing progress compared to before. Indonesia is a developing country in all fields, one of which is sports. Sport is a physical activity carried out intentionally and planned for the purpose of enjoyment, health, or achievement. Sport is an activity widely carried out

by society, its existence is now no longer underestimated but has become part of people's lives (Asnaldi, 2019). Sport has become a social phenomenon that has spread throughout the world. Sport has become a means of recreation, education, achievement, and health. In the Law of the Republic of Indonesia No. 11 of 2022 concerning the Sports System, Article 1 states: achievement sports are sports that foster and develop athletes in a planned, systematic, integrated, tiered and sustainable manner through competitions to achieve achievements with the support of sports science and technology.

Based on the statement above, it can be stated that one of the goals of the Indonesian government in the field of sports is achievements in various sports. The achievement of sports achievements in Indonesia is expected to grow a generation that is physically and mentally healthy, has noble morals, is optimistic, and disciplined, so that it has a positive impact on development in other fields. Many types of sports are chosen by the community to achieve achievements, one of which is martial arts. One of the popular martial arts both in Indonesia and internationally is karate. Karate is a bare-handed martial art so that in technical training it tends to use the hands rather than the feet, in using the hands to hit and block with the principle of one attack making the opponent unable to put up any more resistance (Arie Asnaldi, 2019). According to Qu (2017) Karate consists of kihon, kata, and kumite training. Kihon involves basic techniques, where as kata and kumite are two types of competition, which means Karate consists of kihon, kata, and kumite training.

According to Berman hot Simbolon (2014) karate techniques are divided into three main parts, namely; Kihon, which are basic karate techniques such as hitting, kicking, and blocking; (2) Kata, which is practice of moves; (3) Kumite, which is practice of sparring or fighting. In the sport of karate there are three levels of value or score, namely ippon (three lifts), waza-ari (two points), and yuko (one point). In karate-do itself, kihon means more as standard forms that become the basic reference

for all techniques or movements carried out in kata and kumite. According to Dody Rudianto (2010) kihon or basis can literally be interpreted as the initial foundation (root) or referred to as basic karate movements. In principle, it is the practice of basic karate techniques such as punching techniques (tsuki), kicking (keri), blocking (uke), and evasion (uci). Punching techniques (tsuki) in karate martial arts are physical attacks using the hands. In martial arts there are several types of punching techniques, namely, gyaku-tsuki, oitsukai, agetsuki, kizami-tsuki, ura-tsuki, kage-tsuki, mawasi-tsuki, awasetsuki, yama-tsuki, heiko-tsuki, hasami-tsuki (Nakayama, 1980). The gyaku-tsuki punch is a reverse punch, the punching leg and fist are on opposite sides. The left leg is in front, with the right fist then launch the right fist forward according to the predetermined target point.

One exercise that can increase the speed of yakutsuki punches is rubber training. This is in accordance with the results of research by Rahyuddin JideSame (2021:141), who explained that punching training using rubber weights has an effect on increasing the average punching speed in karate. The type of rubber used for this exercise is Resistance Bands. Resistance bands are flat or tubular rubber bands. Resistance bands are training tools made of elastic rubber with varying levels of strength. This tool can be used for various types of exercises, such as strength training, balance training, and flexibility training.

Dojo lemhari kota jalur is the only karate club in Teluk Kuantan that is still in the process of training for karate, both physical, technical, tactical and mental training. This training is expected to produce quality athletes who excel in every competition both at the regional and national levels. Based on observations and training experiences that researchers conducted at the dojo lemhari kota jalur Taluk Kuantan on December 13, 2023, there are still many athletes who are not good at doing gyaku-tsuki punches, there are still many athletes who make mistakes when

doing gyaku-tsuki punches, it is also seen that many athletes still do punches that are not directed at the intended target.

Observations and interviews with coaches at the Lemkari dojo in Kota Jalur also confirmed that many athletes lack speed, particularly in gyaku-tsuki punches. Therefore, the researchers were interested in examining the issues within this club.

## METHOD

This research method is a quasi-experimental one. The goal is to determine whether there is a comparable causal effect between controlled variables. The population in this study was all 15 female karate athletes active in the Lemkari dojo in the city of Jalur Taluk Kuantan. The sample used in this study was taken using a propensity sampling technique with certain considerations. This research instrument used the Gyaku-tsuki punch speed test. Statistical data analysis techniques used the Liliefors normality test and the t-test with a level of  $\alpha = 0.05$ .

## RESULTS

Based on the results of the research on the influence of resistance bands on the speed of the gyaku-tsuki punch, the pre-test results for the speed of the gyaku-tsuki punch obtained the lowest value of 31, the highest value of 43, the average was 37.6, and the standard deviation was 3.13, while the post-test results for the lowest speed of the gyaku-tsuki punch were 40, the highest value for the speed of the gyaku-tsuki punch was 56, the mean was 45.6, and the standard deviation was 4.54. For more details, see the table below:

**Table 1.** Frequency Distribution of Pre-test and Post-test Data

Interval Class	Fa		Fr		Category
	Pre-Test	Post-Test	Pre-Test	Post-Test	
>50	0	2	0%	13.3%	Very well
44-50	0	8	0%	53.3%	Good
38-44	8	5	53.3%	33.3%	Currently
33-38	5	0	33.3%	0%	Not enough



<33	2	0	13.3%	0%	Less than once
Amount	15	15	100%	100%	

**Table 2.** Normality Test

Variables	Group	L count	L table	Information
Resistance band training on gyaku-tsuki punch speed	Pretest	0.094		Normal
	Posttest	0.158	0.220	

The research hypothesis was tested by conducting a t-test analysis, before conducting the t-test, a normality test was first conducted to determine whether the data came from a normal distribution or not using the Lilliefors test with a significance level of 0.05. Calculation of the results of the Lilliefors test.

**Table 3.** Homogeneity Test

Variables	Fh	Ft	Information
Resistance band training on gyaku-tsuki punch speed	2.10	2.48	Homogeneous

In the table above, it can be seen that the Fh results are smaller than the Ft results, so it can be concluded that the data is homogeneous.

**Table 4.** Hypothesis Test Results

Drill Training Method	Mean	Elementary School	T table	T count l	Test Results	Note
Pretest	36.66	3.13				Ha
Posttest	45.66	4.54	1,761	1,322	Significant	Accept

Based on the table, it can be said that there is an effect of resistance band training on the speed of gyaku-tsuki punches ( $t_{table} 1.761 > t_{count} 1.322$ ), thus the proposed hypothesis is accepted. It can be concluded that resistance band training has an effect on the speed of gyaku-tsuki punches of female karate athletes at the Teluk Kuantan lemakari dojo.

## DISCUSSION

Based on the analysis and processing of data regarding "The effect of

resistance band training on the speed of gyaku-tsuki punches of female karate athletes from Lemkari City Dojo, Taluk Kuantan route", this chapter will answer the research questions in accordance with the formulation of the problem that has been proposed previously, namely whether there is an effect of resistance band training on the speed of gyaku-tsuki punches of female karate athletes from Lemkari City Dojo, Taluk Kuantan route. Regarding gyaku-tsuki punches and resistance bands, in order to provide a clearer answer to the question, it can be described as follows:

### **Gyaku-Tsuki Punch**

Same (2021) explains that gyaku-tsuki is a punching technique in which the punching foot and fist are on opposite sides. If the left foot is in front, punch with the right hand. This technique is primarily for countering attacks after a block, but it can be quite powerful if the rotating hips function correctly. Pay attention to the position and height of the waist. This is especially important when moving forward, backward, or sideways; the waist height must be the same. The back leg must be straight, and try to position the hips and center of gravity slightly forward. All of this will strengthen the punch. The Gyaku-tsuki punch is a basic punching technique that students must master correctly. The true hitting technique is a technique that uses energy, speed and accuracy of the blow with a certain proportion. So when you make a blow, find out exactly what you want. To practice punching, it's just a matter of targeting what can be done and using a training strategy using a ball target. What if a punching technique is practiced without any targets or targets. With the media and ball targets, students can practice their shots so that they become stronger, and the accuracy of the shots is better.

In the punching technique, speed and accuracy in punching are the main elements that must be considered when carrying out an attack with the aim of not being easily hit or cut by the opponent (Matutu et al., 2019). According to Manullang (2014) said that punching is one of the dominant techniques in the

martial art of karate. Gyaku tsuki punch is a punching technique by cutting the opponent's attack / countering the opponent's attack towards the solar plexus (Purba, 2014). Manullang (2014) also said that gyaku tsuki punch is a dominant punch performed by a karate athlete in kumite, among other punches such as Oi-Tsuki Chudan and Oi-Tsuki Jodan.

In line with what was stated by Muladi and Wiratama 6 (1996:46) that *gyakutsuki* is a punch that is done with the position of the feet and hands opposite each other, if the left foot is in front then the hand used to hit is the right hand and vice versa. The *gyaku tsuki* punch technique according to Ilham Hakim Subroto (1996:46) is to stand with a front horse stance, the left foot in front and the right foot is placed in a line behind it. Make a fist with your right hand with the fingers facing up then place it beside your waist. Extend your left hand forward, as when practicing a long thrust punch. The body position must also be upright with your gaze straight ahead. Rotate your waist to the left (without turning your feet) so that your body faces forward. Simultaneously, thrust/hit your right hand straight forward. Focus the power on the striking hand. When the right hand is struck, the left hand must be clenched (fist facing upwards) then pulled back and placed beside the chest/waist to replace the position of the right hand.

*Gyaku tsuki* is a punching technique in karate martial arts that aims straight forward hard and fast, using maximum power, the *gyaku tsuki* punch uses the opposite hand to hit with the supporting leg in front so that the hitting hand and leg are on opposite sides. According to Quinzi in Amertha (2020), the punch technique in Karate martial arts is aimed straight forward hard and fast, using maximum power, the *Gyaku-tsuki* punch uses the opposite hitting hand with the supporting leg in front so that the hitting hand and leg are on opposite sides.

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## Resistance Band

Resistance Band has the elastic property of being a peg, its elastic property can be used in a resistance training process. Utilizing the reattractiveness of our own character. According to Martin Lingga Dwi Pranata (2017) he said: “Your kicking speed can be increased using weight training with the spring force training of the elastic properties of the Rubber Band. Rubber resistance is a training aid that can be used to increase kicking speed because resistance training can increase speed.” Likewise, if this rubber training is used to train the speed of the Gyaku-Tsuki punch. Rubber training is a form of training that uses rubber as a training material, the goal is to develop muscle strength. The rubber used can be used inner tube rubber that is no longer used or you can buy training rubber at a sports store. The rubber, which works with a spring system, creates a pull during a gyaku-tsuki strike. It also trains two main components of training: technique and physique. Training with the rubber isn't monotonous, focusing on a single technique, but can be done with various variations to prevent athletes from getting bored with the same movements.

training is one type of exercise that can help speed up tsuki. Resistance bands, made of rubber, are effective and portable training tools. The resistance level of most resistance bands is indicated by their color. However, not every set of resistance bands has the same color. Light, medium, heavy, and very heavy are the four resistance classes. Users can evaluate the level of stress achieved at each stage of the training process (Septri, 2023). Research has tested the effectiveness of rubber-based tools, such as resistance bands, in a variety of exercises, including martial arts training. Findings indicate that rubber-based training can significantly improve athletic performance by increasing strength, speed, and overall movement efficiency (Brown, Smith, & Lee, 2021). The use of rubber as a training tool is not only effective in increasing speed but also contributes to physiological and anatomical adaptations (Yulianti et al., 2024). The rubber, which works with a spring

system, creates a pulling moment during punches, which simultaneously trains the athlete's technique and physique (Prasetiya & Aryanti, 2024).

Thus The more resistance band training they use, the better their Gyaku-tsuki punches. This was also explained in the results of the treatment, which showed that the resistance band training method affected the Gyaku-tsuki punch speed of female karate athletes from the Lemkari Dojo in Jaluk Taluk, Kuantan.

## CONCLUSION

Based on the results of the research and discussion that have been discussed in the previous chapter, it can be concluded that there is an effect of resistance band training on the speed of gyaku-tsuki punches in female karate athletes of Dojo Lemkari Kota Jalur. This is evident from the average results of the pre-test and post-test of 37.66 increasing to 45.66 research on female karate athletes of Dojo Lemkari Kota Jalur Taluk Kuantan. Then obtained thitung (1.322) > ttabel (1.761) at a significant level of  $\alpha = 0.05$ , thus there is an effect of resistance band training on the speed of gyaku-tsuki punches in female karate athletes of Dojo Lemkari Kota Jalur Taluk Kuantan.

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