

## The Effect of Band Resistance Training on Scythe Speed in Male Athletes of Patbanbu Pencak Silat College

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### Abstract

**Background and aim.** Pencak silat requires athletes to master effective kicking techniques, particularly the crescent (sickle) kick, which depends on speed and explosive leg power. However, observations at Patbanbu Air Tawar Pencak Silat School indicate that athletes' sickle kick speed is still relatively low, making attacks easier to anticipate. This study aimed to examine the effect of resistance band training on improving sickle kick speed in pencak silat athletes.

**Methods.** This study used an experimental method with a one-group pretest–posttest design. The research involved 7 male athletes selected through purposive sampling. Data were collected using a sickle kick speed test before and after the training intervention. Data analysis was conducted using a paired sample t-test at a significance level of 0.05.

**Results.** The results showed an increase in sickle kick speed after resistance band training. The mean pretest score was 23, while the posttest mean increased to 26. Hypothesis testing indicated a significant effect ( $t = 5.620 > t_{table} = 2.015$ ), confirming that resistance band training improved athletes' kicking speed.

**Conclusions.** Resistance band training significantly improves the speed of the sickle kick in pencak silat athletes. This method can be recommended as an effective training approach to enhance explosive leg power and support better performance in competition.

**Keywords:** *Resistance Band; Sickle Kick Speed.*

### 1. Introduction

Regular exercise is less likely to experience fatigue in daily activities, because exercise is a natural powerhouse but many people do not realize the importance of exercising. If you exercise regularly and continuously, this can maintain the health of the body as a condition for getting a prosperous and productive life (Akhmad et al., 2021),

The current development of sports has contributed very positively to public health (Al Fakhi & Barlian, 2019). Pencak silat is basically a self-defense of Indonesian people to avoid all catastrophes (Aziz et al., 2002).

(Ban, 2017) Pencak is a method of martial training in the form of dancing and rhythm with the rules of direction for this purpose, while the core of the essence of pencak is a method of fighting to defend oneself that cannot be demonstrated. In the sport of pencak silat to achieve good achievements, you must master various kinds of (Cahyono & Abdurrochim, 2022). Pencak silat means that it is

wrong to be a martial sport that is already popular in Indonesia, including in West Sumatra. Pencak silat is a sport that is in great demand. Pencak silat can be a place to develop talents for children who want to excel at the national and international levels. Supported by Aziz, Benedict & Teh (2002) pencak silat is a martial art that is known as one of the cultural heritage of the archipelago that has gained international recognition.

In the sport of pencak silat there are various techniques such as stance, tidal attitudes, step patterns, defending or parrying (resisting attacks), avoidance or avoidance (without touching the friend's body), and attack/aggression. Attacks consist of hand strikes and leg and foot strikes. Leg strikes consist of kicks, sweeps, and cuts. More dominant kicks are made during the match because the kick has strong power and can generate a lot of points to achieve victory. Layman, kicks consist of straight kicks, scythe/circular kicks, side kicks, and back kicks. A Sickle Kick is a kick that aims to hit

the target on the body versus in a circular manner using the instep. Cahyono, (2022) The ability of a sickle kick means the ability of an athlete to make consecutive kicks in the shortest time with the target of all parts of the body. The sickle kick is an aggressive technique that very often makes points or numbers more obvious or clear and decisive than other attack techniques. (Donie et al., 2022) The crescent kick is interpreted as one of the most dominant techniques used in Pencak Silat sports matches, and the advantage in the crescent kick is that it is an effective kick in getting points (values) so that it is very practical to use for counterattacks after successfully avoiding the opponent's attack. It can be said that a sickle kick is a kick that is used as a movement in anticipation of an attack on the opponent. There are two factors that affect an achievement, namely internal and external factors. Internal factors mean factors that come from the athlete which includes physical, tactical, technical, and mental conditions. These factors contribute to making maximum achievements. External factors are factors that include nutrition and motivation that contribute to maximum athlete achievement.

In physical training, many methods can be used to measure the ability of suitable athletes so that valid data results can be obtained later in accordance with the desired training program (Ediyono, 2017). In line with (Haryanto et al., 2021), the training program has a structured purpose and process so that the purpose of the training program is to enhance ability in competitions or competitions. Speed is defined as the ability of a person to move from one point to another in a short time as (Lubis, 2004). in line with (Maidarman, 2019) Speed works together with the overall movement of the body in a straight line.

Exercise is a systematic exercise activity, over a long period of time, improved gradually and individually, with the aim of establishing physiological and psychological functions that aim to meet the demands of tasks. It can be said that exercise Resistance band able to train the speed of the crescent kick The type of research is experimental research. In this study, it was used to find the effect of the free variable, namely the resistance band exercise on the bound variable, namely the speed of the crescent kick. The research design used by the researcher is one groups pre-test post-test design. An initial test (pretest) to determine the speed of the sickle kick before being

given the treatment. Then, athletes are given a final test (posttest) after being given treatment in the form of exercises to determine the increase in the speed of the sickle kick. This research was carried out at the patbanbu pencak silat school located in the North Padang District, Padang City. In this study, the variable used was the free variable, namely the resistance band (X) exercise, against the bound variable, namely the speed of the sickle kick (Y). The population of silat athletes amounted to 11 athletes in the category of teenagers 12-20 years old. This study uses a purposive sampling technique which with certain characteristics is only male athletes, as a result of which the number of samples in this study is 7 people. In this study, the instrument used was a test of the speed of the sickle kick (Nusufi, 2015). The data analysis techniques used in this study are pretest and posttest t-test analysis

Murray et al. (2005) proves that exercise Band resistance provides a significant impact/effect in increasing speed. Resistance band It is a form of exercise that uses elastic rubber or elastic band which has 2 fasteners that function to tie the legs and tie to the pole or held by other personnel as a weight that functions to increase the explosive power of the leg muscles so that they can harness strength and speed in doing a sickle kick. According to Nabila et al. (2021) Kick speed is very important because its power is much greater than the speed of the punch. In pencak silat, speed in kicking is very necessary in order to achieve as many points as possible as possible as a result of being able to achieve maximum achievements. If an athlete does not have speed in kicking, the kick made is easy to anticipate, can be avoided, parried by the opponent, and can even be Counter by making counterattack movements. So it is clear that speed in kicks needs attention in order to achieve achievements in pencak silat matches. Without speed in the kick, the kick will not be maximized. With this, the importance of pencak silat kick speed must always be strong and good, especially on the leg muscles so that the kick can be done well.

The Patbanbu Air Tawar Pencak Silat College has participated in championships such as in 2018 the student level pencak silat competition at Andalas University, in 2019 the O2SN match in Padang City, in 2021 the ASEAN level University championship and many others. Based on the observations and observations of researchers, at the

time of the Padang City POR (Padang City Sports Week) match which was held in December 2021, there were 7 male athletes who competed. The category that is followed by pencak silat athletes is the youth category. Among them, only a few athletes have achieved achievements such as silver and bronze. This is because many athletes launch forms of attack with sickle kicks. However, this crescent kick was still parried by the opponent, resulting in additional points for the opponent. Attacks with a sickle kick like this are certainly a weak point for athletes. In recent years, silat athletes have decreased during training so that there is still a low speed in making a scythe kick to a shooting target or target. This can be seen when training is found several physical condition problems, namely speed, so that when participating in a match when using the sickle kick, the attack is easy to read by the opponent so that the opponent can easily deflect or dodge the attack without hitting the opponent's body. Based on the above problems, the researcher wants to provide an exercise that aims to increase the speed of the sickle kick, namely by using the Resistance band exercise which is useful for increasing the speed of the sickle kick.

**2. Materials and Method**

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test post-test design. An initial test (pretest) to determine the speed of the sickle kick before being given the treatment. Then, athletes are given a final test (posttest) after being given treatment in the form of exercises to determine the increase in the speed of the sickle kick. This research was carried out at the patbanbu pencak silat school located in the North Padang District, Padang City. In this study, the variable used was the free variable, namely the resistance band (X) exercise, against the bound variable, namely the speed of the sickle kick (Y). The population of silat athletes amounted to 11 athletes in the category of teenagers 12-20 years old. This study uses a purposive sampling technique which with certain characteristics is only male athletes, as a result of which the number of samples in this study is 7 people. In this study, the

instrument used was a test of the speed of the sickle kick (Nusufi, 2015). The data analysis techniques used in this study are pretest and posttest t-test analysis.

**3. Results and Discussion**

**Results**

The variable of the ability of the speed of the sickle kick can be measured using the ability test instrument of the speed of the crescent kick towards the target (peacing), which is carried out 2 tests, namely the test that will be taken at the beginning of the study as a pre- test, and the final test (post-test). Based on the pre-test results that have been obtained, after that a prerequisite test is analyzed with the Lilliefors test as follows.

**Table 1.** Frequency Distribution of Initial Test Results (Pre Test) speed of sickle kick male athletes of patbanbu pencak silat college, North Padang District

Yes	Interval class	Absolute frequency (Fa)	Relative frequency (Fr)	Classification
1	> 25	2	28%	Very good
2	20 – 24	4	57%	Good
3	17 – 19	1	14 %	Enough
4	15 – 16	0	0	Less
5	> 14	0	0	Less Than Once

Based on the calculations listed in the table above, it can be observed that: 2 people or (28%) are in the interval class > 25, and 4 people or (57%) are in the interval class 20-24, 1 person or (14%) is in the interval class 17-19, 0 people or (0%) are in the interval class 15-16, 0 people or (0%) are in the interval class >14.

**Table 2.** Frequency Distribution of Final Test Results (Post Test) speed of sickle kick male athletes of patbanbu pencak silat college, North Padang District

Yes	Interval class	Absolute frequency (Fa)	Relative frequency (Fr)	Classification
1	> 25	6	85%	Very good
2	20 – 24	1	14%	Good

3	17 – 19	0	0	Enough
4	15 – 16	0	0	Less
5	> 14	0	0	Less Than Once

Based on the calculations stated in the table above, it can be seen that: 6 people or (85%) are in

**Discussion**

Based on the results of a study on the effect of resistance band training to increase the speed of the sickle kick of male athletes of the pencak silat patbanbu school, North Padang District, it was proven that resistance band exercises such as (hip extension, hip flexion, hip adduction, hip abduction, foot work drill band, jump squat band, standing leg curl, donkey kicks, straddle band, in outside band, Standing leg raise, standing hamstrings curls, zig zag run, lateral band, kijang run resistance, sprint with partner which was carried out for 16 meetings had a significant effect of increasing the speed of the scythe kick of male athletes of the patbanbu pencak silat college, North Padang District. From the average score of the initial test (pretest) 23 and the final test (posttest) 26. For the hypothesis test, a calculation of  $5,620 > 2,015$  was obtained. Inseparable from the results obtained in this study, it turns out that factors that are interrelated with the training process also greatly affect the results achieved such as repetitions, duration, intervals, and sets in the exercise itself. With the increase in the speed of the sickle kick due to the physical adaptation of the resistance band training which is carried out repeatedly with an increased training load, as a result of the increase in the training load given can affect the athlete's ability. Furthermore, training is able to produce physical activities that are carried out in a planned, continuous and systematic manner so as to improve the functionality and skills of an athlete with a specific goal. The sickle kick is one of the techniques in pencak silat. The explosiveness of the leg muscles plays an important role in silat. By applying resistance band training to silat athletes, it can increase the explosive power of leg muscles so that they have strong power in doing the speed of the sickle kick so that it can produce points during competition.

Of the many sports branches in addition to technical, tactical and mental abilities, physical ability is also very important to be able to achieve a

the interval class >25, 1 person or (14%) is in the interval class 20-24, 0 people or (0%) are in the interval class 17-19, 0 people or (0%) are in the interval class 15-16, 0 people or (0%) are in the interval class >14.

victory or achievement of gold. The physical abilities required are speed. (Radcliffe & Farentinos, 1985) Speed is the ability to perform similar movements in succession in the shortest possible time. In line with Romadhon (2017), speed is very dependent on (direct) strength, because without strength, speed will not be able to be developed if a silat player wants to develop his maximum speed. Silat fighters must also develop strength, which is an interrelated between speed and power that are basically opposites. In increasing the speed of the sickle kick, training is given Resistance Band. (Rosmawati et al., 2019) Resistance Band is an efficient and practical fitness exercise equipment made of rubber with handrails as a support. Training Resistance Band Effective in helping to improve training in pencak silat sports, especially to train the speed of the scythe kick, therefore practice using tools Resistance Band has a significant effect on increasing the speed of the sickle kick in the sport of pencak silat (Setiawan & Denay, 2022). In this case, exercises are carried out to increase the speed of the sickle kick by being given a variety of exercises Resistance Band Among them are: hip extension, hip flexion, hip adduction, hip abduction, foot work drill band, jump squat band, standing leg curl, donkey kicks, straddle band, in outside band, standing leg raise, standing hamstrings curls, zig zag run, lateral band, kijang run resistance, sprint with partner (Susanto & Lesmana, 2020; Syahara, 2019). Thus, it is clear that the training program is carried out using the training method Resistance Band Affects the speed of the crescent kick of male athletes of the Patbanbu Pencak Silat College in North Padang, Padang City. So that this training program can continue to be developed and implemented so that the goals in the training can be achieved optimally.

**4. Conclusion**

Based on the results of research and data analysis, the effect of resistance band training on

the speed of the sickle kick of male athletes of the Patbanbu pencak silat college, North Padang District, Padang City. So it can be concluded as follows: There is a significant influence between resistance band training on the speed of the sickle kick of male athletes at the Patbanbu Pencak Silat College, North Padang District, Padang City. The researcher suggests that coaches should prepare a

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