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### Elastic Power Bands Affect the Improvement of PencakSilat Athlete Sickle Kicks

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#### Abstract

This study aims to determine the effect of Elastic Power Bands training on increasing the sickle kick in the Pencak Silat Athletes of Porprov Kab. Luwu. This research method is quantitative research in the form of an experimental One-Group Pre-test Post-test Design carried out by giving X treatment to the subject. The population in this study was the PencakSilat Athletes of the Province of Luwu Regency, totaling 19 people. The sampling technique was used when all population members were sampled, namely the saturated sample technique. The data collection technique used a sickle kick ability test through pair training. The results of this study indicate that the Elastic Power Bands exercise positively affects the ability to perform crescent kicks in the Porprov Pencak Silat Athletes of Luwu Regency. The test results of the athlete's sickle kick using the Elastic Power Bands exercise, in the pre-test, the average value obtained was 66.4667, and in the post-test, the average value obtained was 80.2667. The two tests performed show that the average post-test has a higher score than the average pre-test, which means that the Elastic Power Bandster exercise has an effect on increasing crescent kick ability. So there is an average difference between the results of the pre-test and post-test, which means that there is a significant effect of Elastic Power Bands training on the pencaksilat sickle kick.

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## INTRODUCTION

Sports have been ingrained in daily life to gain physical and spiritual well-being. Sport has played an essential and meaningful role in public health (Yoikho Karazaqi, 2019). The sport of pencak silat is the original sport of the nation of Indonesia. Sports lately pencak silat is showing more and more positive development, proven by more pencak silat competitions held regionally, nationally, and internationally like a championship Regional District Court, Sports Week National PON, sports week for the southeast asia region Sea Games, Asian level championship Pacific, and world championship (Dewi et al., 2018).

Pencak silat is a martial art inherited by our ancestors as the culture of the Indonesian nation that needs to be preserved, fostered, and developed (Ruwil et al., 2011). Pencak silat is a unity that respects each other as long as colleges, customs, and human beings and does not indulge in disputes to maintain one's attitude fighters who are honest and obedient to the teachings and religions of each. (Syahri, 2019) Along with the times, pencak silat began to be developed in formal and non-formal education units to ensure that this nation's heritage would continue growing and not be lost to the times.

According to (Anse, 2017), In terms of sports, Penal Silat has certain limitations according to the purpose of motion and effort to fulfill physical and spiritual functions. The limits and definitions of sport that have been formulated include the following: sport is any physical activity based on a spirit of struggle

against oneself, others, or natural elements, which, if contested, must be carried out in a chivalrous manner so that it is a powerful educational tool. (Gristyutawati et al., 2012) Some positive values obtained in pencak silat include self-confidence, mental endurance training, self-awareness, a chivalrous spirit, higher discipline, and tenacity. Pencak silat martial arts can also be interpreted as a system of combining motion, attitude, beauty as well as coaching, dexterity, and physical endurance by the overall values of pencak silat, which have a philosophy of noble character and the ideals of society (Nugroho & Hartoto, 2017).

Along with the development of pencak silat, which was only a practical self-defense sport, it has now developed into a sport of achievement worldwide, ranging from young people and teenagers to adults or cadets. The development of pencak silat every year can be seen from the number of championships, starting from the sub-district, district, regional, national, and international levels (Wicaksana & Wahyudi, 2021). Pencak silat in the Luwu district is one of the leading sports; this can be seen from the achievements of the Luwu pencak silat team at the 2018 regional sports week (Porda), where the Luwu pencak silat team was able to become the overall champion in this sport. This is the result of the hard work of athletes and coaches who consistently carry out training programs so that the abilities of Luwu fighters always develop.

The development of young fighters in the Luwu district starts with the pencak silat colleges in the Luwu district, one of the universities that produce the most outstanding

athletes in the Luwu district is the Tapak Suci Putera Muhammadiyah martial arts college. Some achievements of Luwu's pencak silat athletes are the first overall winner in the adult and youth categories at the Unismuh 1st Pencak Silat Open 2019 championship and first place overall in the pencak silat sport Porda 2018 in Pinrang district.

The explosive power of the leg muscles is used to perform robust and fast kicking techniques, such as side kicks (Candra Juli, 2019). Leg muscle explosive power can be defined as a group of leg muscles' ability to produce work quickly (Yulifri, Sepriadi, 2018). In addition to the explosive power of the legs, the balance element also has an important role when kicking because, in the sport of pencak silat, balance plays a vital role in achieving better performance. To achieve maximum performance, there are several sports achievement factors, namely physical, technical, tactical, and mental aspects.

Physical factors, namely those related to structure, posture, and genetically determined motor abilities, are determinants of achievement consisting of several essential components: strength, speed, flexibility, agility, endurance, explosive power, balance, and coordination. Human motor abilities This complex can be improved according to the specificity of each sport (Kurniawan, 2016).

Of the several physical components that affect the ability of the sickle or sidekick, namely the speed of limb, explosive power, and balance. The dominant factor in kicking ability is the speed and explosive power of the limbs, which can produce a horizontal thrust

of the body to get the full kick. A kick is an attack that produces more points than a punch if it hits the opponent cleanly (Palgunadi et al., 2021).

Result A good kick is obtained from good technique mastery and influenced by good physical condition; one of the physical conditions is explosive power. In this case, the explosive power in question is the explosive power of the leg muscles. To get leg muscle, explosive power can be obtained with various exercises, including leg muscle strength training (Fikri & Hardiyono, 2021). In addition, elastic bands are also safer to use because these tools are flexible and will not cause injury if they come into contact with human skin (Abdullah et al., 2019).

Exercise must understand as follows: 1) To increase physical development in general, 2) To develop specific which to determine the need for the sport, 3) To perfect sports techniques & conditions of motion, 4) to Increase & perfect energy, 5) Improve personality such as willpower, religion, perseverance, enthusiasm & discipline. The majority of fighters often use the sickle kick technique as an attack to achieve victory. To achieve the optimal sickle kick technique in pencak silat martial arts, it must be based on the principles of modern and varied training to increase the speed of the sickle kick correctly and by what is desired (Murad, 2020).

Therefore, a good kick is a kick that is difficult to read, anticipate, or catch by the opponent. The sickle kick is one of the martial arts discipline's attacking techniques with the feet. According to (Tofikin, 2019), The sickle

kick is one of the attack techniques with the feet that is in the teachings of pencak silat.

Based on observations made on pencak silat athletes in the Luwu district, when athletes do sparring exercises, they often use sickle kicks as attacks or defense attacks to collect points. Most of them lack kicking speed when doing sickle kicks, so their feet are often caught even though the opponent does not always slam them. Their kicks also often do not hit the target. Also, some athletes have an unbalanced body position when lifting their feet, so it is advantageous for the opponent to perform a throwing technique.

The primary purpose of this research is to find an answer that fits the problem above, namely, to determine whether there is an effect of using Elastic Power Bands on Side Kicks in Pencak Silat Athletes from Porprov Kab. Luwu? So from the statement above, the author tries to use media with Elastic Power Bands to improve the ability of the fighter's sickle kick. The use of Elastic Power Bands is expected to have a positive influence on athletes and be able to improve the ability of the sickle kick so that athletes can use the sickle kick effectively; by using the Elastic Power Bands, the athlete will learn to know the shooting distance and speed of the sickle kick so that their kick can be right on target and also with Elastic Power Bands Athletes will be directed to be careful using the sickle kick so that their kick is not easily caught.

## METHODS

The research used is the One-Group Pre-test Post-test Design experiment, carried out by giving X treatment to the subject (Arikunto,2013). Before being given treatment, the subject was given a measurement of the initial test (Pre-test) of the sickle kick ability (O1), and after being given the treatment, the state of his kick was measured again with a final test (Post-test) of the sickle kick ability (O2). The results of the two measurements were compared to test whether the treatment given could improve the ability of the sickle kick in the PorprovKab. LuwuPencakSilat Athletes. The research was conducted at the PencakSilatPedepokan. Pattedong Village.Ponrang District, Luwu Regency, South Sulawesi Province. The research was carried out for 16 meetings on 13 March - 20 April 2022.

The sample of this study is a saturated sample, where the total population is less than 30 people. The sample in this study were athletes of PencakSilatPorprovKab. Luwu totaling 19 people.According to Sugiyono 2016 (M. Maulana et al.,2020), Saturated sampling is a sampling technique in which all population members are used as samples. This is often done when the population is relatively small. The data collection technique used a sickle kick ability test through the pair training method; Validity and reliability test is the research instrument, while in qualitative research, the data is tested

The sheet instrument is in the form of a test to observe the implementation of the

Demonstration Method conducted by the researcher. The grid of this test sheet is based on the instrument grid for measuring the appearance of pencak silat skills (Lubis, J.,

2014). There are ten indicators in the assessment of kicks. The measurement of the lattice instrument for the achievement of pencak silat skills is as follows:

Table 1. The instrument grid for measuring the performance of pencak silat skills

No	Straight kick indicator, side, sickle	6	7	8	9	10
1	Posture position (initial attitude)					
2	Knees lifted first ( $\pm 100$ degrees)					
3	Body position when lifting legs in a state of balance					
4	Letting go of a straight leg					
5	The position of the body when releasing the legs is in a balanced state.					
6	The position of both hands close to the body					
7	Pulling the leg with the knees together ( $\pm 100$ degrees )					
8	The position of the body when the knees are close to balance					
9	Position both hands in front of the chest.					
10	Back to the tide in a balanced state					

The data analysis technique used is descriptive and inferential statistics because descriptive statistics are used to get a general picture, and inferential statistics are used to test

hypotheses using paired t-tests. So the statistical data is processed through a computer with the SPSS 26 program with a significant rating of 5%.

Table 2. Recommended Athlete Skill Performance Assessment

Category	Woman	Man
Very well	80-100	85-100
Well	71-79	74-84
Enough	66-70	68-73
Not enough	56-65	61-67
Less once	>55	>60

## FINDINGS AND DISCUSSION

### Findings

Tests for mastery of the motion of the sickle kick pencak silat and exercises using *Elastic Power Bands* were held to determine the effect of *Elastic Power Bands* on the athlete's ability to perform these movements. The test is carried out by demonstrating the pencak silat movement, namely the sickle kick,

one by one, in front of a tester. The assessment is given using an instrument in the form of a form for measuring the appearance of pencak silat skills. The final score of the test is obtained from the total number of truth values for the sickle kick.

Table 3. Calculation Results of Normality Test of sickle kick ability with Elastic Power Bands against sickle kicks in pencaksilat athletes from PorprovKab. Luwu

No	Variable	N	KS	sig	Description	
1	Pre-test sickle kick ability	19	,160	,200	0.05	Normal
2.	Post-test sickle kick ability	19	,160	,200	0.05	Normal

It can be seen that the results of the normality pre-test with a sample of 19 people obtained the Kolmogorov Smirnov (KS) value of .160 with a significance value of .200 > 0.05. This indicates that the pre-test exercise ability Elastic Powerbands for the pencaksilat athletes from PorprovKab. Luwu were usually distributed. Meanwhile, the results of the post-test exercise treatment Elastic Power Bands to

improve sickle kick ability with a sample of 19 people obtained the Kolmogorov Smirnov (KS) value of .160 with a significance value of .200 > 0.05; this shows that the post-test exercise Elastic Power Bands against the sickle kick of the PorprovKab. Luwupencaksilat athletes were usually distributed.

Table 4. Calculation Results of Homogeneity Test of Elastic Power Bands against sickle kicks with Elastic Power Bands for pencak silat athletes from Porprov Kab. Luwu

No	Variable	Levene Statistics	df1	df2	Sig.	Description
1	Scythe Kick Ability	,462	1	38	,852	Homogeneous

The results of the ability to kick the sickle on a pencaksilat athlete from PorprovKab.with a Levene Statistic value of .462 and a significance value of .852 > 0.05, it can be seen that the data is homogeneous, so it

can be concluded that the test of mastery of the motion of the sickle kick pencaksilat using Elastic Power Bands exercises has the same variance or is homogeneous.

Table 5. Test results Paired sample t-test Sickle kick ability with Elastic Power Bands forpencaksilat athletes from PorprovKab. Luwu.

No	Variable	t <sub>count</sub>	t <sub>table</sub>	Sig. (2-tailed)
1	Pre-test - Post-test	0.68836	1,727	0.101

Based on the table of results of the paired t-test above, the value of sig can be seen.  $2.0101 < 0.05$ , the t<sub>table</sub> 0.68836, and the t<sub>count</sub> 1.727 (t<sub>count</sub> > t<sub>table</sub>), Ho is rejected, and Ha is accepted. So it can be concluded that there

is an average difference between the results of the pre-test and post-test, which means that there is a significant effect of Elastic Power Bands on the mastery of the motion of the sickle kick pencak silat.

## Discussion

This study aimed to determine the effect of elastic power bands on side kicks in pencak silat athletes from PorprovKab. Luwu. from\_ maximum pre-test = 87, the average (mean) = 84.21, while for the post-test, the maximum value = 90, the average (mean) = 85.11. Meanwhile, based on the table of paired t-test results above, it can be seen that the sig value is. 2-tailed is  $.0101 < 0.05$ , the  $t_{table}$  is 0.68836, and the  $t_{count}$  is 1.727 ( $t_{count} > t_{table}$ ), then  $H_0$  is rejected, and  $H_a$  is accepted. So there is an average difference between the results of the pre-test and post-test, which means that there is a significant effect of Elastic Power Bands training on the pencak silat sickle kick. If it is in line with the results of previous studies, namely, results of the calculation of the t-test to increase the speed of the pencak silat sickle kick, have an increase of 10.55% with a significant value of 5% of 0.5. This means that there is an increase that occurs from the pre-test and post-test results because rubber weight training affects the increase in the speed of the pencak silat sickle kick (Murad, 2020). Meanwhile, according to (Rosmawati & Darni, 2019), Kicking as part of the pencak silat technique requires agility. This can be seen in the fact that when kicking, Pesilat usually kicks by lifting one leg. The Elastic Power Bands training method trains the athlete's ability to perform the sickle kick by looking at the target of the sickle kick directly when dealing with his training partner; the Elastic Power Bands exercise also allows athletes to measure the speed of the kick, the explosive power of the

muscles and skills in the form of the lack of movement carried out in their training so that they always strive to maximize their movement in training, it makes athletes active in the training process, besides that Elastic Power Bands exercises are also very appropriate for training athletes to maintain shooting distances and aiming devices. The series of movements learned in the training process are given repeatedly so that the kicks that will be carried out can be carried out optimally. (Pepep Mochamad Syafei, 2021) Using rubber tires, the kick sabi kick exercise can increase the speed of the pencak silat sickle kick. It has a  $t_{count}$  of 13.34 and a  $t_{table}$  of 9.39 ( $df=18$ ) at a significant level of 5%. This research is reinforced by several previous studies entitled "The effect of rubber tube training and leg weights on the speed of the female fighter's sickle kick in extracurricular pencak silat. In this study, the tools used were rubber inner tubes and leg weights (A. Maulana & Wijaya, 2018). The Effect of Kick Training Using Rubber Tires on the Results of the 2021 Pencak Silat Scythe Kick (Nabila et al., 2021) The Effect of Leg Press Exercises Power in 2016 Pencak Silat Athletes (Eti Setiawati, 2016).

Based on the 5 (five) research results above, paying attention to the significance of the implications of the sickle kick and the provision of Elastic Power Bands exercises to improve the athlete's ability to perform the sickle kick and systematic exercise can be done using weights to increase muscle strength, also to improve fitness, strength, health, and achievement in a sport, especially

pencak silat. The components of physical fitness in pencak silat include endurance. This match is related to the time of the match played in the match. According to (Abdurahman et al., 2014), The bow kick, better known as the sickle kick, is the most dominant kick used by fighters in fighting, especially in the sparring category, because this kick is very practical and efficient to use in attack and defense. The sickle movement also uses body bending to direct the sickle kick to the stomach and chest of the opponent. The key to increasing the strength in your leg muscles is to train them in every way possible. There is no other way to give your body the strength it needs to reach your most significant potential. The primary purpose of training is to help athletes improve their skills and performance. Coaches are responsible for ensuring that the training programs they create provide athletes with the tools and challenges they need to achieve these goals.

The results of research, exercise using Elastic Power Bands is an appropriate variation of exercise to improve psychomotor skills, such as the sickle kick in the martial art of pencak silat; the use of Elastic Power Bands exercises provides an opportunity for athletes to play an active role in the training process and also provides opportunities for athletes to interacting and measuring kick speed, explosive power, interaction in Elastic Power Bands training does not directly make athletes get maximum training results when they have obstacles in the moving process, in this case, athletes have the opportunity to try new things. So that the use of Elastic Power Bands

exercises can help athletes to improve psychomotor skills, in this case, the ability to kick the sickle. Kick is one technique that has many advantages when compared to punching techniques. Kicks will result in a greater chance of scoring points in each match. The kick often used in practice and matches are the Sickle Kick (Adnadia, F. D., Purnomo, E., & Haetami, 2022).

## CONCLUSION

Based on the results of data analysis, description, testing of research results, and discussion, the results of this research can be concluded; the table of paired t-test results above can be seen in the value of sig. 2-tailed is  $.0101 < 0.05$ , the  $t_{table}$  is 0.68836, and the  $t_{count}$  is 1.727 ( $t_{count} > t_{table}$ ), then  $H_0$  is rejected, and  $H_a$  is accepted. So there is an average difference between the pre-test and post-test results, which means that Elastic Power Bands training has a significant effect on the Sickle Kick Pencak Silat Porprov Kab. Luwu.

Exercise using Elastic Power Bands can speed up the sickle kick with proper practice carried out systematically, and the loading used can increase muscle strength. The spring force and internal elastic properties burden training kick speed.

Elastic Power Bands exercise is fun and invites athletes to be active in the training process, helping athletes to solve problems in the sickle kick training process through Elastic Power Bands. This will undoubtedly help athletes to get better training results by making athletes play an active role in training with a pleasant atmosphere. For this reason, more



complex further research must be carried out to be helpful in the development of sports achievements of athletes in Indonesia, mainly the sport of pencak silat.

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