



The Effect of Total Body Resistance Exercise Variations on the Speed of Youth Pencak Silat Scythe Kicks

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ABSTRACT

The magnitude of the sickle strike directly influences the number of match points that can be achieved in the martial art of Pencak Silat. The aim of this study is to undertake a comprehensive analysis of the impact of different types of Total Body Resistance Exercise training on the speed of Pencak silat sickle kicks performed by teenagers. This research methodology utilises a hypothetical inquiry that consists of two distinct groups: an experimental group and a control group. The subjects of this study were combatants who had engaged in the practice of Pencak silat at State Vocational High School (SMK) Negeri 1 Stabat. There were a total of 52 participants who met the requirements for this inquiry. The sample was gathered using purposive sampling, which followed the specified criteria. To participate, one must have attended Pencak silat training sessions at SMK N 1 Stabat, have a high level of skill in the fundamental methods of the sickle kick, be between the ages of 17 and 19, and be willing to serve as a study sample. The confirmation of eligibility for a group of 33 individuals, consisting of 17 girls and 16 males, resulted from the assessment of these specific criteria. This research apparatus is utilised to assess the speed of Pencak silat kicks and estimate the impact of sickle blows. Consequently, Total Body Resistance Exercise training affects the speed of sickle kicks. However, there is no noticeable statistically significant variation in sickle kick speed among adolescent Pencak Silat practitioners.

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INTRODUCTION

Pencak silat is an Indonesian martial art. According to Hayati and Endriani (2021), pencak silat is a highly renowned martial art in the province of Stabat. Stabat Province has reportedly made significant achievements in the realm of Pencak Silat martial arts on a national scale in the United States. In the 2023 Pre-Popnas zone V competition, the Stabat Province team won two gold medals, three silver medals, and five bronze medals

in the sport of Pencak silat (MC PROV STABAT, 2022). This is a remarkable accomplishment. According to Guntur Sutopo and Misno 2021, the fundamental techniques used in Pencak Silat are the same as those seen in other martial arts. These approaches consist of stance, posture, direction, step pattern, scissors, locks, parries, strikes, and kicks. The composition of this includes several forms such as the sickle, back, straight, T, and jejag. Among these, the sickle form is the most commonly employed, especially for striking techniques.

The sickle kick is termed as such due to its trajectory resembling that of a sickle. Within specific circumstances, a sickle kick is sometimes denoted as a circular kick. The sickle kick can be achieved using the following method: The starting position is determined by facing away from the opponent. When attempting to kick with your right foot, it is advisable to establish a posture that includes your left foot. The position is assumed with precision and determination. Execute a forceful movement of the leg towards the adversary while placing pressure on their instep. Initiate a direct movement towards the opponent's leg and deliver a forceful strike with the instep of your foot. To maintain equilibrium, it is necessary to flex the arms in front of the torso (as stated in Article 1915). The aforementioned kick technique is a highly efficient tactic for scoring points during a contest (Harahap and Sinulingga 2021). This kick can be swiftly and spontaneously conducted, as long as the distance is equal to the length of the foot (Aguss and Fahrizqi 2020). If you own amazing coaching skills, you will surely acknowledge this solution as a feasible alternative for accomplishing your goals.

To optimise the Pencak silat sickle kick, it is possible to attain the desired speed training outcomes by using a wide range of alternate training methods, regardless of whether tools are used (Sucipto, Adrian, and Kencono 2021). Total Body Resistance Exercise is a physical exercise that utilises rope aids. One form of resistance training involves using internal tensions, also known as the body's own weight. The Total Body Resistance Exercise (TBRE) model is a distinctive type of physical activity that can improve muscle strength and endurance, nerve-muscle coordination, and stability, according to Hidayat et al. (2023). Tom Wheatley devised the abducted lunge and side-to-side lunge leg exercises as two variants of the Total Body Resistance Exercise with the specific aim of targeting the leg muscles (Uchaera, Maulidin, and Muhsan 2020). These variants are part of the range of TBR exercises. In order to adapt to the dynamic movement pattern, the core muscles need to maintain an upright position and make necessary adjustments. Can this training method effectively be used to enhance the speed of Pencak silat sickle kicks? Undoubtedly, this requires a dedicated component in the form of a research study.

According to the researcher's observations at Sekolah Menengah Kejuruan (SMK) Negeri 1 Stabat, a school located in an area with a significant population of teenagers aged 10 to 19, there is a prevalent involvement in the practice of Pencak silat martial

arts. The researchers made some fascinating discoveries throughout their examination, which are as follows: The equipment used in Pencak silat training adheres to the standards for training fundamental methods, and teenagers who participate in Pencak silat training demonstrate a notable level of excitement during their training sessions. In addition, they have acquired proficiency in some fundamental techniques of the martial art. To obtain maximum success in the fundamental kicking technique, it is necessary to make several changes, including incorporating advanced, supportive activities. Without a doubt, this is a favourable advancement; yet, there are certain aspects that necessitate enhancement in order to achieve the utmost level of accomplishment. The instructor exclusively utilises shadow tactics and kicking techniques in the sickle kick training methods.

The inclusion of shadow techniques and kick pecing in scythe training is considered accurate when it relates to core Pencak silat methods. However, upon further scrutiny, it becomes apparent that teenagers have gained expertise in these essential methods. Therefore, it is crucial for trainers to prioritise the teaching of basic techniques, focusing specifically on strengthening the dominant muscles in Pencak silat. Instructors can utilise the intense enthusiasm seen in the practice of Pencak silat to introduce training tools for strengthening the muscles used in sickle kicks.

The preceding research pertinent to this study is an investigation that seeks to ascertain the effectiveness of Total Body Resistance Exercise in augmenting the physical fitness of high school students. The findings of this study demonstrated positive outcomes, including a significant 29.33% improvement in physical fitness (Uchaera, Maulidin, and Muhsan 2020). Another study relevant to this topic examines the possibility of increasing the speed of sickle kicks by the use of hopping exercises. The investigation findings revealed that the performance of sickle kicks is affected by the level of physical activity (Putri, Syarifoeddin, and Hartika 2023).

This study has resemblances to two previously referenced studies. A notable distinction is that this research project employs a modified version of Total Body Resistance Exercise to assess the level of improvement in sickle strikes in Pencak silat. This study is unique since it is the first to investigate how different variants of Total Body Resistance Exercise can improve sickle kicks in Pencak silat. In this research effort, a control group has been included to serve as a reference for comparison (Sinuraya and Barus 2020).

RESEARCH METHOD

Currently, a quasi-experimental study is being conducted to analyse a control group and an experimental group. The subjects of this study were combatants who had engaged in the practice of Pencak silat at State Vocational High School (SMK) Negeri 1 Stabat. There were a total of 52 individuals that met the requirements for this

investigation. The sample was gathered using purposive sampling, which followed the specified criteria. To participate, one must have attended Pencak silat training sessions at SMK N 1 Stabat, possess a high level of skill in executing the fundamental methods of the sickle kick, be aged between 17 and 19, and be willing to serve as a study sample. The confirmation of eligibility for a group of 33 individuals, consisting of 17 girls and 16 males, resulted from the assessment of these specific criteria. The groups were determined using a random approach, which led to the collection of 17 samples for the experimental group and 16 samples for the control group when the operation was completed. This study tool utilises stopwatches, metres, and punching bags. (Rozi, Safitri, & Syukriadi, 2021) The crescent kick speed test is performed with a striking bag, with a duration of 10 seconds. The optimal number achieved from the punching bag is established after three attempts. The subsequent table presents a visual representation of the sickle kick instrument:

Table 1.
Scythe Kick Test Instrument

Category	Women's	Men's
Very good	>24	>25
Good	19-23	20-24
Fair	16-18	17-19
Less	13-15	15-16
Very Poor	<12	<14

An analysis of the increase in the category that was obtained following the training treatment will be undertaken once the data from the study's findings have been evaluated using SPSS version 22. The data analysis performed using SPSS 22 involves a direct evaluation of the level of improvement that can be achieved after the exercise treatment. This is done by conducting a parametric paired sample t-test to determine the normality of the data using the Shapiro-Wilk test.

RESULT AND DISCUSSION

The aim of this study is to assess the extent to which different combinations of Total Body Resistance Exercise training can improve the speed of sickle kicks in adolescent Pencak silat practitioners. The factors used to determine the posttest speed results of the teenage Pencak silat sickle kick event are as follows:

Table 2.
Results of Youth Pencak Silat Scythe Kick Speeds

Category	Pr.Eksperimen	Po. Eksperimen	Pr. Kontrol	Po. Kontrol
Excellent	2	8	2	2
Good	10	9	9	11
Fair	5	0	5	3

The findings of the study on the speed of the crescent kick indicate that there are differences in the posttest outcomes between the experimental and control groups. The control group likewise displays these inconsistencies. The experimental group has superior sickle kick speed enhancement. The statistical analysis can be described with precision as follows:

Table 3.
Summary of Descriptive Statistics

Kategori	Pr.Eksperimen	Po. Eksperimen	Pr. Kontrol	Po. Kontrol
N	17	17	16	16
Range	9	9	9	11
Min	16	19	16	16
Max	25	28	25	27
Mean	22.46	23.44	20.81	21.38
Std.D	2.733	2.732	2.639	2.964

The summary descriptive statistics indicate that the experimental group had an average rise of 0.98, whereas the control group had an average increase of 0.51. Despite a slight difference in appearance, the control group maintains a higher position compared to the other group. The results of the normality test, determined using the Shapiro-Wilk method, are as follows:

Table 4.
Data Normality Test

Result	Shapiro wilk	Description	Status
Pr.Eksperimen	0.730	Sig.>0.05	Normal
Po.Eksperimen	0.622	Sig.>0.05	Normal
Pr.Kontrol	0.661	Sig.>0.05	Normal
Po.Kontrol	0.954	Sig.>0.05	Normal

The data normality test has revealed that the p-values for both the experimental and control groups are more than 0.5. It can be deduced that the distribution follows a normal pattern. The homogeneity test is performed in the subsequent manner:

Table 5.
Homogeneity Test

	L	DF1	DF2	Sig.	Description
Speed Scythe Kick	0.015	1	31	0.903	Homogen

The homogeneity test, conducted using the F test, indicated that the data samples were derived from a homogeneous population, characterised by equal variance. Here is an example of the paired sample t-test:

Tabel 6.
Uji Paired Sampel T Test

	Sig.(2-tailed)	Description
Eksperimen	0.000	Influential
Kontrol	0.083	Not Affected

The experimental group demonstrated a significance level of 0.000, which is lower than the threshold of 0.05, as indicated by the results of the Paired Sample T Test with two-tailed significance. In contrast, the control training group had a p-value of 0.083, which above the threshold of 0.05. Therefore, it may be inferred that the experimental group affects the velocity of the sickle kick, whereas the control group has no impact on it. The findings of the independent sample t test are provided in detail below:

Table 7.
Independent Sample T Test

	Sig.(2-tailed)	Description
Eksperimen	0.061	Not Significant
Kontrol	0.062	Not Significant

The Independent Sample T-Test with two tails in the experimental group resulted in a significance level of 0.061, which exceeds the threshold of 0.05. The control group yielded a similar outcome, since their value of 0.062 exceeded the threshold of 0.05. The findings indicate that there is no statistically significant disparity in the speed of the sickle kick between young individuals who engage in Pencak silat. This is supported by the fact that both groups have a two-tailed significance level greater than 0.05.

This study shows that alterations in Total Body Resistance Exercise (TBRE) training affect the speed of sickle kicks, even though there is considerable variation in sickle kick speed among adolescent Pencak silat practitioners. According to a study conducted by Nasrulloh and Wicaksono in 2020, Total Body Resistance Exercise has the capacity to enhance leg muscle strength by 6.88%. This discovery aligns with the findings of prior inquiries. According to a study conducted by Saputra et al. in 2023, training with Total Body Resistance Exercise can significantly enhance leg muscular power by 22%.

This study utilises a modified version of the abducted lunge and side-to-side lunge leg exercises, originally created by Puti, Syarifoeeddin, and Hartika in 2023, for the purpose of Total Body Resistance Exercise. This workout variation can be utilised to improve the stamina and muscular strength of the quadriceps, calves, gluteus, and hamstrings. The researchers anticipated that this would result in an acceleration of the sickle kick; unfortunately, this expectation has not been met. However, additional research is need to explore a range of kicks, such as the back, straight, T, and jejang kicks, along with other variations of the Total Body Resistance Exercise.

CONCLUSION

Includes a succinct summary of the findings from the study. The implementation of different forms of Total Body Resistance Exercise (TBRE) training has a discernible impact on the speed of sickle kicks, as evidenced by the findings of this study. However, there is no noticeable variation in the speed of sickle kicks among teenagers who practise Pencak silat. Scientists have suggested that the speed of the sickle kick could be enhanced by including Total Body Resistance Exercise in the training programme. This measure would be introduced with the purpose of incorporating diversity into the training programme.

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