The Effect of Repetition Training Method on PPLP Dispora Riau Pencak Silat Athletes’ Crescent Kick Speed

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Abstract. The problem in this study is the low speed of the crescent kick of PPLP Dispora Riau Pencak Silat athletes caused by lack of repetitions. Crescent kick velocity can be increased through repetition training method. The purpose of this study was to determine whether Repetition method significantly affects Crescent Kick Speed PPLP Dispora Riau Pencak Silat Athletes. This research belongs to an experiment design. This study uses two times the research design, the initial test (test Pree) are denoted O_1 and final test (post-test) are marked with O_2. Population and sample in this study is Pencak Silat athletes PPLP Dispora Riau province, amounting to 8 people. Statistical analysis of t test formula was used to process the data from pretest and posttest. After the statistical computation process, the observed value was compared to the critical value. Based that computation, the observed value is higher than the critical value. It means that there are significant differences between the results of the initial test and final test. The data analysis also gives the conclusion that an increase in 15.13% of the comparison results of the initial test and final test. Based on the above results, it can be concluded that the proposed hypothesis is proven that there is a significant influence of the Repetition Exercise Method in improving Crescent Kick Speed of PPLP Dispora Riau Pencak Silat athletes.

1. The Background of the Study
The Independence of Indonesia was highly tied to the role of patriotisms in making against and defending the independence using traditional self-defense. One of the most well-known traditional self-defense is Pencak Silat. Pencak Silat is Indonesian cultural heritage used to plead and retain national existence and integrity in attaining harmony in life leading to the augmented belief and god-fearing to god the one [1]. Therefore, Pencak Silat need to be well-preserved in community live to fortify comprehensive understanding and implementation of national ideology, reinforce national identity, consolidate national pride and keep together national unity spirit [2].

Terminologically, Pencak Silat is made up from two words, Pencak and Silat. Pencak means the basic movements tied to certain rules and are used in learning, training and show. Silat, on the other hand, is defined as perfect self-defense movements resulting from pure spirituality [3]. As a result, Pencak Silat can be defined as basic self-defense movements tied to certain rules and used in learning, training and shows. In addition, Silat is perfect self-defense movements resulting from pure spirituality for social and individual safety and security [4].

As a martial art, Pencak Silat has some basic techniques affecting the athletes’ achievement level. The basic techniques in question are: stance, punching, resisting, parrying and kicking [5]. Those techniques are used to cope with various situations to stand against and anticipate opponents’ attacks [6]. Amongst those basic techniques, kicking is deemed as a very easy technique to do in attack...
(dekdikbud), however, based on earlier observations, kicking technique has a relatively high risk and weakness, and the crescent kick is one of the examples.

A crescent kick is a semicircular inward kick aiming any part of opponent’s body using back feet [7]. The crescent kick is the most dominantly used kicking technique for its practicality in fight [8]. In addition, this kicking technique, has a high impact and risk on both user and opponent as this crescent kick is the combination of various supporting factors of physical conditions such as leg muscle strength and movement coordination [9]. However, the most common problem in doing this type of kick is the low speed of the kicking hence it can be easily detained and knocked down by the opponent [10]. As a result, special training method needs to be organized to improve the velocity in doing crescent kick [11].

There are various methods deemed appropriate in increasing one’s crescent kick speed. In this case, doing some exercises focusing on the speed [12]. One of the methods considered appropriate to increase crescent kick velocity is repetition method. Repetition method is a kind of training that focuses on doing repetition on the training course along with high intensity of loads and is supplemented by intervals giving a chance of full recovery [13]. This training method is suitable to enhance motoric velocity, reflex speed, speed momentum and maximum power [14]. Doing this method of training, the athletes are expected to gain more speed in using crescent kick.

2. Method

The current study used employed quasi-experimental research with one group pre-test post-test design. In determining the sampling, this research used total sampling technique. In this case, eight PPLP Dispora Riau Pencak Silat Athletes were asked to participate in this experimental research [15]. They were observed as one group experiment. Prior to the treatment, a pre-test was administered to measure the velocity of the subjects’ crescent kick. Afterwards, those athletes were given 12-time treatment aiming at the improvement of their crescent kick velocity. At the end of the research a posttest were then given in order to discover whether or not their crescent kick speed increased. The measurement in posttest was carried out by asking the participants to crescent kick the sandbag for 10 seconds with three repetition. After that, the number of kicks performed by the athletes was then compared to Athletes’ Crescent Kick Speed Assessment Criteria (table 1) [8].

| Categories    | Number of performed kicks |
|---------------|---------------------------|
| Very good     | >25                       |
| Good          | 20-24                     |
| Moderate      | 15-19                     |
| Low           | 10-14                     |
| Very low      | <9                        |

To find out whether or not there is significant effect of Repetition training Method towards PPLP athletes’ crescent kick speed, the researcher used the following t-test formula:

\[ t_o = \frac{M_D}{SE_{MD}} \]

MD = Means of Difference
\( t_o \) = t observed
SE\(_{MD}\) = Standard Error of Means of Difference
3. Result

3.1. Pre-test Data on PPLP Dispora Riau Pencak Silat Athletes Crescent Kick Speed

The data from the initial measurement of the athletes showed that there are three frequency distributions of the athletes’ crescent kick speed. It means there are three interval classes with the range 2 of interval class. The first interval class is 21-22 consist only 1 participant. The second interval class is 23-24 consisting 3 subject representing 37.50 % of the total participants. And the third interval class is 25-26 consisting 4 participant representing 50% of the total subjects of the research (table 2).

| No | Interval | F | X  | FX | Fr  |
|----|----------|---|----|----|-----|
| 1  | 21 – 22  | 1 | 2  | 2  | 12.50%|
| 2  | 23 – 24  | 3 | 2  | 7  | 37.50%|
| 3  | 25 – 26  | 4 | 2  | 1  | 50   |
| total |       | 8 | 70.5 | 194 | 100% |

The data from the pretest shows that the maximum score for crescent kick speed is 25 and the lowest score is 21. Means of the pretest is 24.25, the Median is 24.5 and the mode is 24.9.

![Pre-test Data on PPLP Dispora Riau Pencak Silat Athletes Crescent Kick Speed](image)

3.2. Post-test Data on PPLP Dispora Riau Pencak Silat Athletes Crescent Kick Speed

From the final measurement on Crescent kick speed of the athletes, the researcher came up with the following data. There four frequency distributions with range 2. The first interval class 23-24 consists of one subject representing 12, 50 % of the total participants. The second interval class 25-26 entails one subject resulting the same percentage as the previous interval class. The third class 27-28 is represented by 3 subjects and the last interval class 29-30 is represented by 37.50 % of the total participant. Both third and fourth interval classes consist three subjects.

| No | Interval | F | X  | FX | Fr  |
|----|----------|---|----|----|-----|
| 1  | 23 - 24  | 1 | 23,5 | 23,5 | 12.50%|
| 2  | 25 - 26  | 1 | 25,5 | 25,5 | 12.50%|
| 3  | 27 - 28  | 3 | 27,5 | 82,5 | 37.50%|
| 4  | 29 -30   | 3 | 29,5 | 88,5 | 37.50%|
| total |       | 8 | 106 | 220 | 100% |
The highest score from the post test data is 30 and the lowest score is 23. The means of the speed of crescent kick in posttest is 27.5. The median from table 3 27.9 and the mode is 28.5. The data from table 3 is also presented in the following chart or graphic.

![Post Test](image)

**Figure 2.** Post-test Data on PPLP Dispora Riau Pencak Silat Athletes Crescent Kick Speed

### 3.3. Hypothesis Testing

After the data from pretest and posttest had been collected, the data were analyzed through quantitatively. Afterwards, statistical analysis of t-test were used to test the hypothesis of the research. The test was carried out by comparing the means from the same group. It means that the data distribution came from the same group or the same subjects. After the t-observed had been obtained from the t-test statistical analysis, the observed value were then compared with the critical value (df = N-1). If the observed value is higher than the critical value, there will be a significant difference between pretest and posttest. On the other hand, if the observed value is lower than the critical value, there will be no difference between pretest and posttest. The summary of the statistical computation is presented in table 4.

| Means | Observed value | Df (N-1) | Critical value | Improvement | Conclusion |
|-------|----------------|----------|---------------|-------------|------------|
| Pretest | 24             | 27.63    | 11.19         | 7           | 1,895      | 15.13%     | Significant effect |

Table 4 shows that the observed value is 11.19. This value is then compared to the critical value. Using degree of freedom (df) = 7, the critical value is 1.895. This comparison leads to a conclusion that the observed value is higher than the critical value which means that there is a significant difference between pretest and posttest. In addition, the data analysis shows there exist 15.13% improvement from the pretest to posttest. This analysis confirmed the alternative hypothesis claiming that there is a significant effect of repetition method toward PPLP Dispora Riau Pencak Silat athletes’ crescent kick speed.

### 4. Discussion

Based on the data analysis, it can be deduced that there is significant effect of repetition method towards PPLP Dispora Riau Pencak Silat Athletes’ Crescent Kick Speed. The significant effect of the method is
due to the fact that the repetition method is one of exercise methods fitting to the sport development, specifically Pencak Silat [16].

The chance for an athlete to achieve a better goal is highly affected by various exercise factors such as duration method, repetition method, and interval method (Syafruddin). One special indicator of repetition method is that between the repetitions of the training course with high intensity load there is supported by the intervals that may lead to full recovery [17]. This training method is suitable to enhance motoric velocity, reflex speed, speed momentum and maximum power of Pencak Silat Athlete crescent kick.

Apart from exercise factors, physical condition contributes to every Pencak Silat basic techniques. Each of the physical condition contributes in different ways in supporting pesilat performing the basic techniques both for defense and offense [9]. However, well-applied repetition method will enhance athlete’s physical conditions and crescent kick speed [18].

Research have confirmed that repetition method has significant role in improving athletes’ crescent kick speed. By practicing repetition method regularly, autonomous movement that has impact on crescent kick velocity can be achieved upon the completion of the training. The aforementioned condition requires regular and continuous practice in applying the exercise method.

5. Conclusion
In line with the data analysis, it can be concluded that of using Repetition Training Method significantly affect PPLP Dispora Riau Pencak Silat Athletes’ Crescent Kick Speed. This conclusion may lead to the recommendation that Coaches need to implement various method of repetition training appropriately so that the development of sport will result in better achievement.

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