

Effect of Weight Training Exercises With Permanent Repetition and Set Increases Against Speed of Straight Kick Pencak Silat Athletes

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Abstract—The aim of this study is to find out whether there is an effect of exercise weight training with fixed repetitions and sets increases with the increase in straight kick speed in the Pencak Silat athletes of Merauke Faithful Hearts (PSHT) Merauke branch. The method used in this study is a quasi-experimental method (Quasi Experimental Research). The study design used the one group pretest-posttest design. The effect of treatment is measured by the difference between initial / pretest (Y1) and final / posttest (Y2) measurements. The population in this study is the Pencak Silat Athlete Setia Hati Terate (PSHT) Athlete of the Curik Branch of Merauke Regency, aged 13-17 years and totaling 15 people. The data analysis technique uses the t test. Hypothesis testing uses t dependent or paired samples t test. Hypothesis testing was carried out with the help of SPSS 20. The results of this study indicate that there is a significant effect of weight training with fixed repetitions and the set increases with increasing the speed of PSHT curricula in Merauke district. This is indicated by the sig value of calculating the data between the posttest results and the results of the pretest is 0,000, which means it is smaller than 0.05 (0,000 <0,05). Then it can be concluded through weight training with fixed repetitions and increased sets to have an influence in increasing the speed of the straight kick PSHT athletes in the curik branch of Merauke district. The posttest mean value is greater than the mean pretest or (16.60 > 13.60).

Keywords: *weight training, fixed repetitions, sets increase, speed of a straight kick*

I. INTRODUCTION

Pencak silat is a genuine Indonesian martial art that has been recognized worldwide. At present, pencak silat itself has been contested in various national and international sports competitions. Pencak silat itself is not only a sport, but also a reflection of Indonesian culture to defend itself from dangers that threaten its safety and survival. Good quality physical fitness is needed to pass all the training load given. Physical fitness is the ability to perform daily tasks diligently and with vigilance, without experiencing significant fatigue, and with enough energy to enjoy free time and face unexpected emergencies [1].

To be a reliable fighter, you must first enter a Pencak Silat college and practice there. In Merauke Regency there are many Pencak Silat colleges, one of which is the College of Persaudaraan Setia Hati Terate which is based in Madiun East Java with its founder Ki Hadjar Hardjo Oetomo in 1922. PSHT is one of the 10 martial arts colleges that co-founded the Pencak Silat Association (IPSI) in pencak silat congress on 28 May 1948 in Surakarta. SH Terate has branches and branches that are spread throughout the world, one of them in Merauke.

The problems that arise when the Regent Cup 2018 Pencak Silat Championship is on a straight kick, the coach provides information regarding athletes who have failed a lot in straight kick scores, especially speed. The trainer acknowledged that he had never paid attention to the set and repetition in the weight training given, so the researcher was interested in taking research with the title of the effect of weight training with fixed repetitions and increasing sets of the speed of the straight kick pencak silat athlete at brotherhood. With the hypothesis the straight kick speed will be better after being given weight training with fixed reps and set increases. The hypothesis itself is a temporary answer to a problem [2].

Sport is motion behavior that is carried out requires a very complex, fast, smooth coordination relationship of neurophysiological-anatomical functions that converges with psychological functions [3]. Pencak silat is a traditional Indonesian martial art rooted in Malay culture and can be found almost in all parts of Indonesia. Currently pencak silat has been competed in both National and International [4].

The basic movement of pencak silat is a planned, directed, coordinated and controlled movement that has four aspects as a unity, namely spiritual aspects, martial aspects, sports aspects, and aspects of cultural arts. Thus, pencak silat is a complete sport to be studied because it has aspects that all of them are intact which cannot be separated [5]. The basic techniques of pencak silat consist of horses, posture, step patterns, strokes, and attacks. Referring to the context that will be discussed in this study, foot attacks, especially straight kicks. Straight kick is an attack that uses one leg and leg, the path is towards the front with the body facing

forward. Perkenaanannya namely the base of the fingers - the toes in the target with heart and chin.

Nature of exercise is a process that is carried out regularly in order to achieve the stated goals. The nature of exercise in sports means that the process is carried out based on the goals of the sport [6].

Improvement of physical condition is the first element in training, because the elements in this coaching both at the time of heating, playing and others must be accompanied by physical formation [7]. The component of exercise training is the most important factor in influencing training and is one of the keys to success in compiling the program and determining the training load. The concept of FITT (frequency, intensity, time and type) is a training concept that has been widely agreed upon by sports experts. Repetition.

Repetition in training depends on the load used. Repetition is the number of replications performed for each item or training item. In a series or circuit there are usually several items or training items that must be done and each item is carried out many times. So, the repetition in this weight training program is to use fixed repetitions. Typically, high-intensity (or high-load) training interventions utilizing training loads over 75–80 % of one-repetition maximum (1RM) have been more successful at improving BMD when compared to low-load training (50%1RM) interventions [8]. The implementation is repeated in each set with the aim of increasing the speed of the athlete. set is the number of replications for one type of training item. The difference between repetition and set is if the set is used to mention the number of repetitions in a single type of exercise, while repetition is used to mention the number of replications in the exercise consisting of several items.

Weight training is a systematic exercise that uses weights as a tool to increase muscle strength to achieve goals such as improving the athlete's physical condition, preventing injury or for health purposes. Training is the process of preparing an athlete physically, technically, tactically, psychologically, and theoretically rapidly for the highest levels of performance. Training involves more than simple growth and maturation and, of course, the highest levels of performance will be relative to the current status and genetic gifts of the athlete [9]. So that in the training program, the application of load exhaustion is expected to have an impact on the speed of a straight kick.

II. RESEARCH METHODS

This research was carried out in the field of training at the Pencak Silat SH Terate Ranting Kurik RT 13, RW 02, Malind District, Merauke Regency, Papua Province. The sample is part of the number and characteristics possessed by the population [10], the sample in this study is 15 people of martial arts athletes SH Terate Curric branches of Merauke regency aged 13-17 years.

A variable is a symbol that will be given a value or number. Research variables are concrete forms of several concepts[11]. The variables in this study are weight training with fixed repetitions and sets increase as independent variables, while the straight kick speed is a variable that is influenced or bound. The research method used is the experimental method. The design of this research was One-Group Pretest-Posttest Design, one group was observed and then treated. In this design observations were carried out 2

times before the experiment and after the experiment. Observations made before the experiment (O1) are called pre-tests, and post-experimental observations (O2) are called post-tests. The following design drawings are intended:

Instrument research used in research this is a straight kick speed test. Tests are generally a data collection tool and as a basis for assessment in the process of education or training [12]. The coefficient value of validity and reliability was taken through samples of Merauke Regency athletes from 2005 to 2015, with reliability of 0.87 and content validity with face validity. Measuring the speed of pencak silat kicks can be seen as follows:

- 1) *Objective:* to determine the ability of the speed of the pencak silat at the athlete.
- 2) *Tools:* Sandsack, meter, stopwatch.
- 3) *Officer:* The sandsack height meter/ timekeeper target, sandsack guard.
- 4) *Implementation:* the athlete prepares to stand behind the sandsack / target with one foot resting behind the line as far as 50 cm (daughter) 60 cm (son). When the 'yes' command, the athlete kicks in with the right foot and returns to the initial position by touching the floor behind the line, then continues the right kick as fast as possible for as long as 10 seconds Likewise, with the left foot. Implementation can be done 3 times and the best time is taken with the height of sandsack / target 75 cm (daughter) and 100cm (son).
- 5) *Rating:* score based on the fastest time the athlete's appearance

TABLE I. VALUATION OF STRAIGHT KICK ATHLETES' SKILLS

Category	Princess	Men Very
Good	> 23	> 25
Good	19-22	20-24
Enough	14-18	15-19
Less	8-13	10-14
Less	<7	<9

III. . RESULT AND DISCUSSION

Study was carried out at the training ground of the athletes of SH Terate Kurik branch in Merauke district on June 30, 2018 until July 28, 2018. The pretest was conducted June 30, 2018 and the Posttest was conducted on July 28 2018. The following data were obtained and the results of statistical data analysis, namely:

TABLE II. DESCRIPTIVE STATISTICS PRETEST AND POSTTEST

No.	Statistics	Pretest	Posttest
1	N	15	15
2	Mean	13.60	16.60
3	Median	14.00	17.00
4	mode	13	17
5	Minimum	13	15
6	Maximum	16	19
7	Sum	207	249

Descriptive analysis pretest to the tests carried out on athletes SH Terate the Kurik branch of Merauke district can be seen in the following results:

TABLE III. PRETEST STRAIGHT KICK RESULTS DATA

No	Interval	Frequency	Percentage
1	10-11	1	6.66%
2	12-13	6	40%
3	14-15	7	46.66%
4	16-17	1	6.66%
5	18-19	0	0%
Total		15	100%

The results of the posttest descriptive analysis for the tests carried out in athletes SH Terate the Kurik branch of Merauke district can be seen in the following results:

TABLE IV. DATA ON POSTTEST STRAIGHT KICK RESULTS

No	Intervals	Frequency	Percentage
1	14-15	2	13.33%
2	16-17	11	73.33%
3	18-19	1	6.66%
4	20-21	1	6.66%
5	22-23	0	0%
Total		15	100%

The results of the homogeneity test at pretest and posttest are known that the pretest and posttest 1,000 values are greater than 0.05 ($1,000 > 0.05$). Then it can be concluded that the pretest and posttest data have homogeneous variances.

TABLE V. RESULTS PAIRED TEST (T TEST)

Group	Mean	Value Calculated t	Value Table	Significant
Pretest	13.60	15,370	2,160	0,000
Posttest	16.60			

Based on the analysis output paired until the test above can be seen that sig calculates the data between the posttest results with the results of the pretest is 0,000 which means less than 0.05 ($0,000 < 0,05$), then the hypothesis in this study is accepted. This means that there is a significant effect of weight training on increasing the speed of the athlete's straight kick SH Terate branch of the Merauke district.

This study aims to determine the effect of weight training with fixed repetitions and the set increases with the speed of the straight-line athletes of the SH Terate branch of the Merauke district. The results showed that there were differences in the speed of the athlete's kick before and after weight training with fixed repetitions and increased sets. This is indicated by the average value at the posttest which is greater than the pretest ($16.60 > 13.60$). In order to improve

the speed capability of the Terate Branch of the Kurik SH straight kick, the right training method is needed, one of which is by using weight training with fixed repetitions and increasing sets.

IV. CONCLUSION

Weight training with fixed repetitions and increased sets is a form of exercise designed to increase the speed associated with certain sports. So, weight training with fixed repetitions and increased sets will contribute positively to increasing kick speed in athletes. This result is also expected to be a constructive evaluation material because the purpose of evaluation is to gather information about the workings of something which then the information is used to determine the right alternative in making a decision.

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