The Effect of Dumble Weight Training and Spring Strength Training on Speed Jab's Punch

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Abstract

Studi Purpose The problem of this research is that the athletes are less than optimal in doing the speed of the jab. This study aims to determine the effect of dumbbell weight training and spring force training on the speed of the jab. **Method** This research is a type of quasi-experimental research. This research was carried out at the Andalas Plaza, Padang City. The time of the research implementation is from February 21 to March 21, 2021. The design of this research is "pre-test and post-test two group design". The overall population of athletes at Plaza Andalas Boxing Camp, Padang City. Sampling was taken using a total sampling technique, where the sample was male athletes, totaling 8 athletes. The types of data needed in this study are primary data and secondary data. Sources of data obtained through direct data collection in the field through tests and measurements of the sample. The instrument of this research is through a jab speed test. **Result** The statistical data analysis technique used the Liliefors normality test and t-test with a significant level of = 0.05. From the results of the research, the effect can be seen from the mean difference t-test where the increase in the speed of the jab in the dumble weight training group is 17 times higher than the group using the spring force training group 6 times. Thus, this value indicates that the given dumbbell weight training and spring force training have differences in increasing the speed of the jab at the Plaza Andalas Boxing Camp boxing athletes, Padang City.

Keywords: Dumble's Load; Spring Force Load; Jab Blow Speed

1. Introduction

Exercise is part of human daily activities that are useful for forming a healthy body and spirituality. At this time, sports have a positive and real influence on improving public health. Most Indonesian people have realized that health maintenance is absolutely necessary as long as humans still want to live a physically and spiritually healthy life. This is proven by the competition of Indonesian people to carry out sports activities, and even often carry out regional, national and international competitions.

Boxing is a contact sport with high physical and psychological intensity. Using a punch that determines a defeat or defeat, the main goal is to hit the opponent and receive as few punches as possible (Hlavačka, 2017). Boxing is a sport where two people who fight each other using their fists each other try to get more points by using skills, especially in amateur boxing, beauty is more important than strength (Fajar Gunawibawa, 2016). Boxing is one of the most popular offensive fights sport in the world, with nearly 200 affiliated countries associated with its international governing body, the "International Amateur Boxing Association" (Maamer Slimani, 2016).

Boxing is one of the sports that is very popular among the public, both young and old, even today boxing is not only contested for men, but boxing, both professional and amateur boxing, has been contested for women (Lahinda, 2020). Boxing is a sport that is the basis of various kinds of martial arts, for example, Tarung Drajat, Muaythai, wushu, karate, and new martial arts, namely free fighting such as (UPC, MMA, ONEPRIDE) (Anam, 2019). Boxing is a very promising sport to get many medals because boxing has more than 15 match numbers (Sinurat, 2020).

Boxing is a type of combat sport where in every match requires a hard physical collision between fellow athletes to knock each other down and get points with the rules that have been set in the match rules (Lumba, 2018). Boxing is a sport and martial arts that features two people of the same or similar weight competing against each other using their fists in a series of matches with one- or three-minute intervals called "ronde" (Osmon, 2019).

Training is one of the most important strategic factors in the coaching process to achieve the maximum quality of achievement in a sport. In an exercise plan, the purpose of the training must be clearly delineated, the methods and materials used to achieve these goals, and the necessary facilities and infrastructure (Kurniawan, 2018). Exercise is a systematic training process that is carried out repeatedly and the number of training loads is increasing day by day (Ardi, 2018). Varied exercises will create a pleasant training atmosphere for athletes so that in participating in training athletes are not saturated or bored with the training materials so that they can participate in activities with enthusiasm (Cifero, 2020).

Jab punches are very light and easy to do so this punch is an effective way to keep distance and is half attack punch and half defensive punch so this punch is a punch to provoke the opponent to get the opportunity to make a crushing blow (Imakulata Magi Loda, 2017). The Jab punch is the opening punch in the sport of boxing. Jab punches in the form of straight forward punches can be directed at the opponent's face or body (Marisa, 2020).

Based on the results of observations and observations on Wednesday, February 23, 2020, the boxers' abilities at the Plaza Andalas Boxing Camp, Padang City. Meanwhile, in sports activities, coaches do not pay attention to the athlete's ability optimally, so that when doing boxing sports activities, athletes are very lacking to achieve

maximum results at the speed of each jab punch. Because jab punches are to win points or to be knocked out punches in boxing, this needs attention and needs to find a way out. To increase the speed of the jab punch, a variety of physical exercises can be used. To improve punching ability in boxing, it is necessary to train weights.

2. Materials and Methods

This research is a type of pseudo-experimental research. This research was carried out at the andalas plaza in Padang City. The research was conducted from February 21 to March 21, 2021. The overall population of athletes at Plaza Andalas Boxing Camp, Padang City. Sampling was taken using the total sampling technique, where the sample was male athletes totaling 8 athletes. The research instrument is through a jab punch speed test. The statistical data analysis technique used the normality test of liliefors and the t-test with a significant level of α=0.05.

3. Result

Pre Test Dumble Weight Training Against Jab Punch Speed

The effect of the effect of dumbbell weight training on jab stroke speed, from the results of the pre-test jab stroke speed was obtained the lowest score of 33, the highest score was 71, the average was 54 and the standard deviation was 15.78. For more clarity, see table 1 below

Table 1. Frequency Distribution of Dumble Weight Training Pre-Test Data Against Jab Punch Speed

Interval Classes	Fa	Fr	Category
>84	0	0	Very good
70-83	1	25	Good
55-69	2	50	Keep
41-54	0	0	Less
<40	1	25	Less Than Once
Sum	4	100	

Based on the table above, it can be seen that the results of the data analysis of the pre-test data of dumbbell weight training on jab stroke speed with the interval class >84 did not find people with the good category of seklai, interval class 70 – 83 as many as 1 person (25%) with the good category, interval class 55 – 69 as many as 2 people (50%) with the medium category, interval class 41 – 54 no people with a low category and interval class <40 as many as 1 person (25%) with category less than once.

Post Test Dumble Weight Training Against Jab Punch Speed

The effect of dumbbell weight training on jab stroke speed, from the results of the post test jab stroke speed obtained the lowest score of 63, the highest score of 77, the average is 71 and the standard deviation is 6.68. For more clarity, you can see table 2 below.

Table 2. Frequency Distribution of Dumble Weight Training Post-test Data to Jab Punch Speed

Interval Classes	Fa	Fr	Category
>84	0	0	Very good
70-83	2	50	Good
55-69	2	50	Keep
41-54	0	0	Less
<40	0	0	Less Than Once
Sum	4	100	

Based on the table above, it can be seen that the results of the analysis of the post-test data of dumbbell weight training on jab stroke speed with the interval class >84 were not found by people with the good category of seklai, the interval class 70 – 83 as many as 2 people (50%) with the good category, the interval class 55 – 69 as many as 2 people (50%) with the medium category, the interval class 41 – 54 were not found by people with the low category and the interval class <40 was not found by people with less than one category.

Pre Test Spring Force Load Training Exercise Against Jab Stroke Speed

The effect of spring-force weight training on jab stroke speed, from the results of the pre-test jab stroke speed the lowest score was obtained at 45, the highest score was 68, the average was 58 and the standard deviation was 11.34. For more clarity, you can see table 3 below.

Table 3. Frequency Distribution of Spring Force Load Exercise Pre-Test Data Against Jab Stroke Speed

Interval Classes	Fa	Fr	Category
>74	0	0	Very good
65-73	2	50	Good
56-64	0	0	Keep
47-55	1	25	Less
<46	1	25	Less Than Once
	4	100	

Based on the table above, it can be seen that the results of the analysis of the pre-test data of spring-force load training on the speed of jab shots with the interval class >74 were not found with the very good category, the interval class 65 – 73 as many as 2 people (50%) with the good category, the interval class 56 – 64 did not find people with the medium category, the interval class 47 – 55 as many as 1 person (25%) with the low category and the interval class <46 as many as 1 person (25%) with less than one category.

Post Test Spring Force Load Exercise Against Jab Stroke Speed

The effect of spring-force weight training on jab stroke speed, from the results of the post test jab stroke speed obtained the lowest value of 57, the highest value of 72, the average is 64 and the standard deviation is 6.24. For more clarity, you can see table 4 below.

Table 4. Frequency Distribution of Post-test Data Spring Force Load Exercise Against Jab Stroke Speed

Interval Classes	Fa	Fr	Category
>74	0	0	Very good
65-73	1	25	Good
56-64	3	75	Keep
47-55	0	0	Less
<46	0	0	Less Than Once
	4	100	

Based on the table, it can be seen that the results of the analysis of post-test data on the speed of jab shots with the interval class >74 were not found with people in the very good category, the interval class 65 – 73 as many as 1 person (25%) in the good category, the interval class 56 – 64 as many as 3 people (75%) with the medium category, the interval class 47 – 55 did not find people with the low category and the interval class <46 did not find people with the moderate category. category less than once.

Normality Test

The hypothesis of this study was tested by conducting a t-test analysis, before conducting a t-test, a normality test was first carried out to find out whether the data came from a normal distribution or not by using the lilliefors test with a significant level = 0.05.

Table 5. Summary of Normality Test Results of Shooting Ability

Variable	Group	Count	Table	Information
Dumble Weight Training Against Jab Punch Speed	Pre-test	0,1615	0,381	Usual
	Post test	0,1841		
Spring-force load training against jab stroke speed	Pre-test	0, 2019	0,381	Usual
	Post test	0, 2340		

In the table above, it can be seen that the result L_{is} smaller than the $L_{of\ the\ table}$, so it can be concluded that the data is normally distributed.

Homogeneity Test

The results of the homogeneity test analysis of each variable are presented in the form of the table below.

Table 6. Homogeneity Test

Yes	Variable	Fh	Ft	Information
1	Dumble Weight Training Against Jab Stroke Speed (Beginning and End)	5,57	9,55	Homogeneous
2	Spring-force load training against jab stroke speed (start and end)	3,31	9,55	Homogeneous
3	Dumble Weight Training and Spring-Force Weight Training Against Jab Punch Speed (Final)	1,15	9,55	Homogeneous

In the table above, it can be seen that the result F_h is smaller than Ft, so it can be concluded that the data is homogeneous.

Hypothesis 1

There was an effect of dumbbell weight training on jab stroke speed with an average score of 54 and a standard deviation of 15.78 in the pre test, and after being treated 16 times the average score was 71 and the standard deviation was 6.68 in the post test.

Table 7. Summary of Hypothesis Testing Results 1

Exercise	Mean	SD	Stuttgart	Table	Test Results	Ket
Pre-test	54	15, 78	2,53	2,35	Significant	Ha Accepted
Post test	71	6,68				

Based on the table, it can be said that there is an effect of dumbbell weight training on jab stroke speed (t_{count} = 2.53> t_{table} = 2.35), thus the proposed hypothesis is accepted.

Hypothesis 2

There was an effect of spring-force weight training on jab stroke speed with an average score of 58 and a standard deviation of 11.34 in the pre test, and after being treated 16 times the average score was 64 and the standard deviation was 6.24 in the post test.

Table 8. Summary of Hypothesis Testing Results 2

Exercise	Mean	SD	Stuttgart	Table	Test Results	Ket
Pre-test	58	11, 34	2,64	2,35	Significant	Ha Accepted
Post test	64	6,24				

Based on the table, it can be said that there is an effect of spring-force load training on jab stroke speed (t_{count} = 2.64> t_{table} = 2.35), thus the proposed hypothesis is accepted.

Hypothesis 3

There was an effect of dumbbell weight training and spring-force weight training on jab strike speed with an average score of 71 and a standard deviation of 6.68 in dumbbell weight exercises, and spring-force weight

training with an average score of 64 and standard deviation of 6.24.

Table 9. Summary of Hypothesis Testing Results 3

Exercise	Mean	SD	Stuttgart	Table	Test Results	Ket
Post test	71	64	2,48	2,35	Significant	Ha Accepted
Post test	6,68	6,24				

Based on the table it can be said that there is an effect of dumbbell weight training and spring force force weight training on jab stroke speed ($t_{calculation}$ = 2.48> t_{table} = 2.35), thus the proposed hypothesis is accepted.

4. Discussion

The Effect of Dumble Weight Training on the Jab Stroke Speed of Plasa Boxing Athletes

Based on the analysis of the data from the research results that have been carried out, a significant increase was obtained for the group studied. The administration of the treatment for 16 meetings with a frequency of 4 times for 4 weeks had an effect on the speed of the jab shot.

Based on the results of the statistical test, a t-test value was obtained between the pre test and post test of the dumble weight exercise on the speed of the jab punch which had a t-value$_{of}$ 2.53 and a $_{t\text{-value of }2.35}$ d a t-value of > t_{table}, then Ho was rejected and Ha was accepted, so there was a significant influence. Judging from the average value of the jab punch speed, the average pre test score = 54 and the average post test score = 71 were obtained, because the average value of the post test was greater than the average pre-test score , there was an increase in the speed of the jab hit by = 17 times the speed of the jab punch.

Boxing is one of the martial sports that originated from abroad and developed in Indonesia. Each martial arts sport has its own character and characteristics according to its needs (Berrezokhy, 2020). Boxing is a sport that requires both dynamic and static features. Also, it is complex structured and requires strength (E. Çakmakçı, A. Tatlıcı, S. Kahraman, S. Yılmaz, B. Ünsal, C. Özkaymakoğlu, 2019). Boxing is a fighting, complex and intermittent sport in which all physical qualities are manifested. The constant variation of intensity in the action that occurs in each attack and during all battles is divided into a large number of episodes and periods, interspersed with small pauses. Boxing belongs to the acyclic sports modality and has great technical complexity. In it, the movements are carried out with alternating intensity and are governed by the character of speed and strength. The intensity of work during combat varies and alternates submaximal and maximal actions, and all attack and defense actions, as well as their intensity, are a function of the opponent's behavior (Syrlybayev, S., Iskakov, T., Baltina, A., 2019).

The type of dumbbell exercise used is the dumbbell exercise. Dumble wrist is an exercise to flex the wrist using the weight of a dumbbell by doing flexy and extension movements. The longer the wrist, it will make it easier for the player to make the punch and the resulting punch will be better.

With this method of training, plaza boxing athletes can improve the speed of jab punches, Giving dumbble weight training will have a positive impact on athletes to increase strength and speed during jab punches, because in this dumbblle weight training athletes are required to do flexy and extension movements.

Effect of Spring Force Weight Training on Plaza Boxing Athlete's Jab Strike Speed

Based on the analysis of the data from the research results that have been carried out, a significant increase was obtained for the group studied. The administration of the treatment for 16 meetings with a frequency of 4 times for 4 weeks had an effect on the increase in the speed of the jab shot.

Based on the results of the statistical test, the t-test value between the pre test and the post-test of the spring force load exercise on the jab stroke speed which has a t-value$_{of}$ 2.64 and a $_{t\text{-value of }2.35}$ d and a t-value of > table, then Ho is rejected and Ha is accepted, so there is a significant influence. Judging from the average value of the jab punch speed, the average pre test score = 58 and the average post test score = 64 were obtained, because the average value of the post test was greater than the average pre test score, there was an increase in the jab punch speed of = 6 times the jab punch speed.

As stated in the previous theoretical study, spring force load training is an object that has a spiral shape made of metal and is elastic so that it can maintain its shape and will return to its original shape after being forced. So, the definition of spring force in physics is the force or flexing force in a spring that can return to its original position or shape (elastic).

Spring force can be called a spring that is pulled and then we release it, then the spring will return to its original shape or position and this is what is meant by spring force. Springs also have unique properties, namely elasticity or elasticity, while elasticity itself is the ability of an object (rubber) to return to its original shape as soon as the external force exerted on the object is removed (Lingga Dwi Pranata, 2019).

With this method of training, Plaza boxing athletes can improve the speed of their jab punches, Providing spring-style weight training will have a positive impact on athletes to increase the speed of jab punches, because in this spring-style weight training athletes are required to hit fast and strong.

Difference in the Effect of Dumble Weight Training and Spring Style Weight Training on Plaza Boxing Athlete's Jab Strike Speed

The results of the third hypothesis test were based on the results of the calculation of post-test data for the two groups using the t-test statistical approach of 2.48 while the ttable was 2.35 with a significant level of $\alpha = 0.05$ and n = 4, then $t_{calculated}$ > ttable (2.48 > 2.35). In other words, the proposed research hypothesis is significantly tested for its correctness.

Modern boxing originated in England and is known as one of the most popular fighting sports in the world (Zileli, 2108). The sport of boxing is one of the leading branches that requires personal contact and the body's struggle with its style of appearance. This sport is one of the sports branches that relies on the competition of two athletes who

use a special sarong on their branch if they obey the rules of the branch (Ozdil, 2016).

After treatment was given through both exercises it was shown that the dumbbell weight exercise was better than the spring-style weight training exercise against the jab punch speed. It can be seen that dumbbell weight exercises have a different average of 17 times the speed of a jab while a spring-style weight exercise has a different average of 6 to 17 times the speed of a jab punch.

Both forms of exercise can increase jab stroke speed, but between the two exercises according to researchers and according to data and facts in the field, dumbbell weight training has more effect than spring-style weight training on jab stroke speed, where dumbbell weight trainingIt is recommended in the implementation of the exercise to lift the load nimbly and quickly, while in the spring force weight training it is only required to be fast. However, in doing exercises to increase the speed of jab shots cannot be separated from the role of the athlete itself, which means that athletes are required to be disciplined in carrying out training programs so that training goals can be obtained to the maximum.

5. Conclusion

There is an effect of dumbbell weight training on the jab stroke speed of boxing athletes at Plaza Kota Padang.

There is an effect of spring-style weight training on the jab stroke speed of boxing athletes at Plaza Kota Padang.

There was a significant difference in the effect between the results of dumbbell weight training and spring-style weight training on the jab stroke speed of boxing athletes at Plaza Kota Padang.

For coaches who have boxing athletes or beginners to use dumbbell weight exercises and spring-style weight exercises or one of them is to increase the speed of jab punches.

It is recommended to pay more attention to other variables that can also affect the speed of the jab punch such as, posture, physical condition and so on.

This research is only limited to boxing athletes in Plaza in the city of Padang, for that it is necessary to conduct research on samples that have a larger number of samples.

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