

CONTRIBUTION OF DECLINE PUSH-UP EXERCISE, HORIZONTAL SWING AND SQUAT-JUMP ON IMPROVING THE RESULTS OF THE O'BRIEN STYLE BULLET THROW FOR EXTRACURRICULAR MALE ATHLETES SENIOR HIGH SCHOOL 2 KISARAN 2015

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ABSTRACT

The low results of athletes' repulsion make the achievement of SMA Negeri 2 Kisaran bullet throw athletes still minimal compared to other athletic numbers. This study aims to find the contribution of decline push-up training, horizontal swing and squat-jump training to improve the results of O'brien style bullet throwing for male extracurricular athletes of SMA Negeri 2 Kisaran in 2015. The research method used in this research is the experimental method, the sample used in this study was 10 people. The research was conducted on 16 October 2015 until 30 November 2015, the statistical calculations used in this study are; Analysis requirements test, Normality test, Bartlet / Homogeneity test and Regression Significance test.

The first analysis is that the decline push-up training exercise makes a significant contribution to increasing the results of the O'brien style bullet throw of extracurricular male athletes of SMA Negeri 2 Kisaran 2015, based on the results of the calculation of $F_{hitung} = 8.96$ and $F_{tabel} (0.05; 1/8) = 5.32$, so that $F_{hitung} > F_{tabel}$ with a contribution of 57.76%. Analysis of the second hypothesis, namely, horizontal swing training gives a significant contribution to the improvement of the results of the O'brien style bullet throw of extracurricular male athletes of SMA Negeri 2 Kisaran 2015, based on the results of the calculation of $F_{hitung} = 11.46$ and $F_{tabel} (0.05; 1/8) = 5.32$, so that $F_{hitung} > F_{tabel}$ with a contribution of 59.29%. Analysis of the third hypothesis, namely, squat-jump training gives a significant contribution to the improvement of the results of the O'brien style bullet throw of extracurricular male athletes of SMA Negeri 2 Kisaran 2015, based on the results of the calculation of $F_{hitung} = 5.39$ and $F_{tabel} (0.05; 1/8) = 5.32$, so that $F_{hitung} > F_{tabel}$ with a contribution of 37.21. The analysis of the fourth hypothesis is that the decline push-up, horizontal swing and squat-jump exercises give a significant contribution together to improve the results of the O'brien style bullet throw of extracurricular male athletes of SMA Negeri 2isaran 2015. Based on the calculation of $F_{hitung} > F_{tabel} = H_0$ is rejected with a contribution of 89.72%.

From hypothesis testing, it can be concluded that; there is a significant contribution of decline push-up, horizontal swing and squat-jump exercises, and there is a significant contribution together from the three forms of training to improve the results of O'Brien style bullet throwing for male extracurricular bullet throwing athletes of SMA Negeri 2 Kisaran 2015.

Keywords: Improved O'Brein Shot Put Results

Introduction

Aif Syarifuddin (1992: 145) states that: "Rejecting bullets is one of the numbers contained in the throwing number contained in the athletic sport whose form of movement is to reject or push a round tool with a certain weight made of metal (bullet) which is carried from the shoulder with one hand to reach the furthest distance".

Achieving achievement is inseparable from the physical condition and good training given by the coach to athletes because physical condition is a big capital to achieve optimal skills, without perfect planning and systematic training, the physical condition factors will not be achieved after a certain period of physical condition training.

We all know that in the implementation of bullets, arm muscle power, waist flexibility and leg muscle power are the main assets that must be possessed by athletes to obtain good achievements and repulsion, so training for the physical components above must be the main concern of the coach, for that the coach must be observant in providing exercises related to improving these physical condition components.

In throwing numbers, coaches often forget about training to increase leg muscle power even though in throwing numbers, leg muscle power also has an important role to get a good throw, this is supported by the author's interview with PPLM UNIMED Throwing coach Mr Joseph Lumy on Tuesday, 19 May 2015 at 16:00 WIB at the UNIMED stadium, he said that physical condition greatly contributes to the results of an athlete's repulsion or throw.

Just as waist flexibility and leg muscle power are also very large contributions to the results of repulsion and throwing, now throwing coaches rarely provide training for the waist and legs, and many coaches do not know the benefits of leg muscle power on the results of throws and repulsion. He also said that a good thrower is a good jumper, so the results of an athlete's throw or repulsion will increase.

To get an increase in achievement and the results of athlete's repulsion in bullet repulsion, one of the exercises that can increase arm muscle power, waist flexibility and leg muscle power is the Decline Push- Up, Horizontal Swing, and Squat-Jump exercises.

Based on the author's observations in the field, the results of bullet throwing from extracurricular athletes of SMA Negeri 2 Kisaran are still not as expected. This has an impact on the achievements of male shot put athletes at the school which are still minimal compared to other athletic numbers, the lack of achievement is due to the lack of physical training provided to improve the physical condition of athletes. At the time of observation, the author saw athletes only doing exercises related to the arms, namely push-ups and the training looked less programmed. For waist flexibility training and leg muscle power is not done.

In addition, the lack of seriousness of the athletes during training causes the intensity of the training given by the coach to not go well so that it becomes another problem that

causes the ability of the athlete's repulsion results to be categorised as less, this can be seen from the results of the preliminary tests of arm muscle power, hip flexibility tests, leg muscle power given to SMA Negeri 2 Kisaran shot put athletes who are still categorised as less to moderate, and from the preliminary test data it can be seen that the absence of training for waist flexibility and leg muscle power greatly affects the repulsion results of a shot put athlete (attached). In the number of rejects and throws, the moderate category cannot be used as a measure for athletes to obtain an achievement.

This is further strengthened by the author's interviews and discussions with the extracurricular athletic trainer of SMA Negeri 2 Kisaran, namely Mr. Drs. Junaidi (May 22, 2021 at 15:00 WIB) he said that the achievement of the men's shot put at the school is still minimal compared to the women's shot put and other athletic numbers, this can be seen in the championships participated in by SMA Negeri 2 Kisaran in the last 2 years (attached), where the men's shot put did not win any championships or medals, he also said that the lack of achievement was not only influenced by the lack of training programmes, but also the lack of training programmes.

support during this time, causing the athlete's physical condition to be slow to develop. The lack of training variations and the seriousness of athletes in training is one of the causes of the lack of achievement and improvement in the results of repulsion for men's shot put numbers at the school.

Based on the description and explanation above, the author concludes that it is necessary to conduct a scientific study. This is done because the author draws a temporary conclusion that the results of throwing bullets of extracurricular male athletes of SMA Negeri 2 Kisaran are still lacking and are still not as expected to achieve an achievement. To improve the results of repulsion, it is necessary to provide exercises aimed at increasing arm muscle power, waist flexibility and leg muscle power. So the author wants to conduct a research with the title "Contribution of Decline Push-Up, Horizontal Swing and Squat- Jump Exercises to the improvement of the results of O'Brien style bullet throwing for male athletes of extracurricular SMA Negeri 2 Kisaran in 2015".

Problem Identification

Based on the description of the background of the problem above, it can be identified several problems faced in this writing, the problems faced are as follows: What factors support the improvement of repulsion results in the O'brien style bullet throw? Can physical condition factors contribute to improving the results of repulsion in O'brien style bullet repulsion? What physical condition factors support the improvement of repulsion results in the O'brien style bullet throw? How to improve these physical condition factors? Is improving physical ability able to improve the results of repulsion in O'brien style bullet repulsion?

Which exercises are able to improve physical abilities and shot put results in the O'brien style shot put? Does Decline Push-Up training contribute to improving shot put results in the O'brien style shot put? Does the Horizontal Swing exercise contribute to improving the shot put results in the O'brien style shot put? Does Squat-Jump training contribute to improving the shot put in the O'brien style? Is there a contribution between Decline Push-Up, Horizontal Swing and Squat-Jump exercises to increase the results of O'brien style bullet throwing on extracurricular male athletes of SMA N 2 Kisaran in 2015?

Problem Restriction

To avoid misunderstandings and interpretations and reinforce the targets to be studied. The problem that becomes the author's target is to find out whether there is a contribution of Decline Push-Up, Horizontal Swing and Squat-Jump exercises to improve the results of O'brien style bullet throwing for male extracurricular athletes of SMA N 2 Kisaran in 2015.

Problem Formulation

Berdasarkan latar belakang masalah, identifikasi masalah, dan pembatasan masalah, maka dapat dirumuskan permasalahan yang akan diteliti sebagai berikut:

1. Is there a contribution of Decline Push-Up training to improving the results of O'brien style bullet throwing for male extracurricular athletes of SMA Negeri 2 Kisaran in 2015?
2. Is there a contribution of Horizontal Swing training to improving the results of O'brien style bullet throwing for male extracurricular athletes of SMA Negeri 2 Kisaran in 2015?
3. Is there a contribution of Squat-Jump training to improving the results of O'brien style bullet throwing for male extracurricular athletes of SMA Negeri 2 Kisaran in 2015?
4. Is there a joint contribution of Decline Push-Up, Horizontal Swing and Squat-Jump exercises to improving the results of O'brien style bullet throwing for male extracurricular athletes of SMA Negeri 2 Kisaran in 2015?

Research Objectives

The objectives of this research are:

1. To determine the contribution of Decline Push-Up training to improving the results of O'brien style bullet throwing for male extracurricular athletes of SMA Negeri 2 Kisaran in 2015.

2. To determine the contribution of Horizontal Swing training to improving the results of O'brien style bullet throwing for male extracurricular athletes of SMA Negeri 2 Kisaran in 2015.
3. To determine the contribution of Squat-Jump training to improving the results of O'brien style bullet throwing for male extracurricular athletes of SMA Negeri 2 Kisaran in 2015.
4. To determine the contribution of the Decline Push- Up, Horizontal Swing and Squat-Jump exercises together to the improvement of the O'brien style bullet throwing results of extracurricular male athletes of SMA Negeri 2 Kisaran in 2015?

Research Benefit

Adapun manfaat dari penelitian ini adalah:

1. Sebagai bahan masukan kepada pelatih atletik, khususnya atletik SMA Negeri 2 Kisaran.
2. Sebagai Sumbangan kecil dalam memecahkan satu dari sekian banyak masalah yang terdapat dalam dunia atletik, khususnya nomor tolak peluru
3. Sebagai penambah wawasan ilmiah ilmu pengetahuan, dan meningkatkan prestasi atletik khususnya nomor tolak peluru dalam pembinaannya serta pengembangannya
4. Untuk memperkaya ilmu pengetahuan cabang olahraga atletik terutama nomor tolak peluru bagi mahasiswa Fakultas Ilmu Keolahragaan
5. Dijadikan sebagai salah satu acuan untuk kegiatan penelitian selanjutnya dengan ruang lingkup yang lebih luas lagi.

Theoretical Review

The Nature of O'Brien Style Shot Put

Munasifah (45) states that: "Rejecting bullets consists of two words, namely reject and bullets, the word reject means push or push. While the word bullet means an iron ball that must be thrown with the hand, so rejecting bullets is a sport that uses tools in the form of iron balls by pushing or rejecting as far as possible ".

According to the IAAF (2011:59) that "The bullet must be pushed or rejected from the shoulder by only one hand. When the athlete takes a standing position in the reject

circle to start the repulsion, the bullet must touch or be very close to the athlete's neck or chin and his hand must not drop below this position during the repulsion. The bullet is not carried behind the shoulder line".

There are 3 ways to hold bullets according to Yudy in Adang Suherman (2001: 189), namely:

1. The fingers are stretched while the little finger is slightly bent and next to the bullet, while the thumb is in its natural position. This method is only suitable for people with strong fingers.
2. The fingers close behind the bullet and the thumb is slightly opened to the side. This is the method used by champions.
3. Like the above method, only the fingers are more stretched, while the little finger is also located behind the bullet. This is suitable for people with small hands.

O'Brien Style Shot Put Technique

The O'Brien style shot put is a style with its back to the direction of the sector, this rejecting technique was first popularised by Parry O'Brien from the United States, O'Brien was an Olympic gold medalist in 1950. This technique is also called the linear technique. In the technique of rejecting bullets, the backward or linear style is divided into phases, namely: preparation, sliding, release, recovery. IAAF (2000: 157).



Picture 1. O'Brien Style Shot Put Source: IAAF (2000: 157)

Handle in O'Brien style

1. The bullets are located on the fingers and the base of the fingers
2. The fingers are parallel and slightly apart
3. The bullet is placed at the front of the neck, thumb on the collarbone
4. Elbow out at a 45-degree angle to the body

According to IAAF Level 1 (2000: 159-165) the stages of the implementation of the movement in the O'Brien style bullet throw are as follows:

1. Start-up phase: To prepare for the sliding stage
2. Glide phase: To initiate the acceleration motion and position the body for the final throwing motion.
3. Sliding motion phase: To initiate the acceleration motion and position the body for the final throwing motion.
4. Bullet Release Phase: To maintain the speed of the bullet and start its main acceleration motion.
5. Bullet release phase: To transfer velocity from the thrower to the bullet
6. Bullet Release Phase: To release the velocity from the thrower to the bullet.
7. Recovery Phase: To balance the pitcher and avoid making mistakes.

To improve an achievement in sports, training is needed. Exercise must be done correctly, programmed and continuously. Harsono (1988: 101) says that; "training is a systematic process of practising or working, which is carried out repeatedly, by increasing the amount of training load or work". Meanwhile Russel R.

Pate (1964:317) says that: "Exercise is defined as the systematic participation in training aimed at improving physical functional capacity and endurance". In doing the exercise must be in accordance with procedures and methods that can and in accordance with the principles of exercise. According to Harsono (1988: 102) says that: "The principles of exercise include: 1) The principle of more load, 2) The principle of all-round development, 3) The principle of specialisation, 4) Principle of individualisation, 5) Principle of intensity and quality of training, 6). The principle of regular training, 7). The principle of recovery".

Nature of the Set

According to Sajoto (1988:118) a set is "A series of activities of several repetitions". Thus the set is the number of treatments performed in one training session. The number of sets for this exercise programme is 3 sets.

The Nature of Repetition

According to Harsono (1988: 188) repetition is "Repeat forces performed when lifting weights". From this understanding, repetitions can be said to repeat the form of exercise movements performed during exercise treatment. The number of reps for this exercise programme starts from 60% of maximum ability.

The Nature of the Decline Push-Up Exercise

Having a good physique is one of the requirements that every athlete must have in his efforts to improve performance. Sajoto (1988: 57) says that: "Physical condition is one of the prerequisites needed in every effort to improve the performance of an athlete, it can even be said to be the basis for the starting point of a sporting achievement".

Push-up decline exercise which is one form of exercise that is useful for training arm muscle power. According to Harsono (1988: 26) arm muscle power is the ability of muscles to release or move maximum strength in a fast time. While Harsono (1988: 176) said that: "Power is the result of strength and speed".

The Nature of Horizontal Swing Training

According to James C. Radcliffe, and Robert C. Farentinos, (1997: 8) "Horizontal swing, is a form of exercise that involves the muscles of the shoulders and arms as well as the posterior (back), lateral (side), and anterior (front) body". The basic movement in this horizontal swing pivots on the arms, shoulders and waist. In throwing bullets, flexibility is a factor that should not be forgotten in order to get a good kick. With this exercise, it is hoped that it can increase the waist flexibility of male bullet throwing athletes of SMA Negeri 2 Kisaran.

If you pay attention to the bullet throwing movement, it can be seen that one of the dominant factors is the muscle power of the arms, shoulders and waist. Thus it can be concluded that horizontal swing training can help increase the muscle power of the arms, shoulders and waist flexibility.

The Nature of Squat-Jump Training

To make the physical condition of bullet shot athletes better, training to increase leg muscle power should not be left out because leg muscle power also greatly affects the results of the repulsion. If the bullet shot athlete has good leg muscle power then when the athlete wants to make a backward kick strong leg power is needed especially in O'Brien's style, in addition to helping repulsion with us having strong legs it will help us maintain balance after we make a repulsion. For this reason, squat-jump training is one form of exercise that can increase the leg muscle power of bullet throwing athletes.

Framework

By doing Decline Push-Up training can contribute to the improvement of bullet shot results. By doing Decline Push- Up exercises regularly and systematically, it will increase arm muscle power, in the shot put the greater the athlete's arm muscle power, the better the shot that will be achieved.

By doing Horizontal Swing training can contribute to increasing waist and shoulder flexibility. So that when the athlete wants to make a repulsion in the O'Brien style, waist flexibility is very influential on the accuracy and results of the repulsion of the male extracurricular bullet repulsion athletes of SMA Negeri 2 Kisaran.

By doing Squat-Jump training can contribute to increasing the leg muscle power of bullet shot athletes, because with leg muscle power it will help athletes in making repulsion, especially in the O'Brien style because in this style athletes turn their backs to the sector so that without having strong leg muscle power, athletes will find it difficult to make repulsion and will have difficulty maintaining balance. If the three physical components above are already owned by bullet throwing athletes, the results of the shot are expected to increase because the coordination of motion and accuracy in making the shot will be able to be done by athletes, especially male bullet throwing athletes extracurricular SMA Negeri 2 Kisaran.

Hypothesis

Based on the descriptions in the theoretical study and the framework, the authors propose a research hypothesis, among others:

1. There is a contribution of Decline Push-Up training to improve the results of O'Brien style bullet throwing for male extracurricular athletes of SMA Negeri 2 Kisaran in 2015.
2. There is a contribution of Horizontal Swing training to the improvement of the results of O'Brien style bullet throwing for male extracurricular athletes of SMA Negeri 2 Kisaran in 2015.
3. There is a contribution of Squat-Jump training to improve the results of O'Brien style bullet throwing for male extracurricular athletes of SMA Negeri 2 Kisaran in 2015.
4. There is a joint contribution of Decline Push-Up, Horizontal Swing and Squat-Jump exercises to improving the results of O'Brien style bullet throwing for male extracurricular athletes of SMA Negeri 2 Kisaran in 2015.

Method

Location and Time of Research

Research location

This research was conducted at the shot put field of SMA Negeri 2 Kisaran, Jl. Sitarda Nusantara VIII Kisaran, Asahan Regency.

Research Time

This study was conducted for 6 weeks with a training frequency of 3 (times) a week, starting from 16 October - 30 November 2015. The training was conducted on Monday, Wednesday and Friday. The training starts from 16.00-18.00 WIB.

Population and Sample

Population

Suharsimi Arikunto (2010: 173) "Says population is the whole subject of research". Sudjana (2005: 6) states that "Population is the totality of all possible, counting and measurement results, quantitative and qualitative regarding certain characteristics of all members of a complete and clear collection that you want to study its properties". The population in this study amounted to 12 people who were male extracurricular bullet throw athletes at SMA Negeri 2 Kisaran.

Sample

Arikunto (2010: 174) "Says the sample is part or representative of the population studied". Sudjana (2005: 6) states that: "The sample is part of the overall object that becomes the population which is considered to represent the entire population". In this study the researchers determined the number of samples to be studied was 10 people. Sampling in this study using purposive sample technique (purposeful sample). The requirements for the sample are: athletes who have never practised throwing bullets, athletes who are actively training, athletes willing to be sampled.

Research Methods

In accordance with the explanation and research objectives outlined earlier that the research used intends to determine whether there is a contribution of Decline Push-Up, Horizontal Swing and Squat- Jump training to the improvement of the results of O'Brien style bullet throwing for extracurricular male athletes of SMA N 2 Kisaran in 2015.

Research Design

The research method used in this research is experimental, using tests and measurements. The design of this study was designed using Pre-test and Post-test One Design, before treatment was carried out, an initial test was carried out and at the end it was carried out by conducting a final test as follows:

Research Instruments

1. Medicine Ball Throw Arm Muscle Power Test
2. Waist Flexibility Test (Flexibilit)
3. Limb Muscle Power Test

4. Shot Put Results Test

Data Analysis Technique

Data obtained from the results of the O'Brien style bullet throw test using statistical procedures using regression analysis, normality test using liliefurs and homogeneity test, with the following calculation steps:

1. Test of analysis requirements
2. Hypothesis Testing
3. Calculating simple regression significance and linearity tests for hypotheses 1, 2 and 3

$$\text{Regression} = \frac{\text{RJK}(b/a)}{\text{RJK}(\text{Res})}$$

4. Testing the 4th hypothesis using multiple regression with equation:

$$Y = b_0 + b_1X_1 + b_2X_2 + b_3 X_3$$

5. Finding the regression significance test

$$F = \frac{\text{RJK}(\text{reg})}{\text{RJK}(s)}$$

Discussion

Research Results

From the results of the post-test decline push-up exercise on improving the results of the O'brien style bullet throw of extracurricular male athletes of SMA Negeri 2 Kisaran 2015, obtained data on arm muscle power with a score range between 3.90 - 5.25, an average value of 4.46, and a standard deviation of 0.48, while the results of the horizontal swing exercise post-test obtained a score range of 15-30, average value of 22.60, with a standard deviation of 4.95, and the results of the squat-jump post-test, obtained a score range of 89-1111, an average value of 101, with a standard deviation of 8.15, then the results of the O'brien style bullet throw post-test obtained a score range of 7.15-9.84, with an average value of 8.08 and a standard deviation of 0.78.

Normality Test

From the calculation results in the table above obtained $L_0 = 0.2231$. At the $\alpha = 0.05$ level, $L_{\text{table}} = 0.258$ is obtained. Thus $L_0 = 0.2231 < L_{\text{table}} = 0.258$, meaning H_0 is accepted. The conclusion is that the sample comes from a normally distributed population.

Homogeneity Test

For $\alpha = 5\%$ from the χ^2 distribution list with $dk = (4-1) = 3$, $\chi^2_{0,95}(3) = 7.81$ is obtained. It turns out that $\chi^2 = 6.33 < \chi^2_{0,95}(3) = 7.81$ so that the hypothesis stating homogeneous

variances is accepted at the $\alpha = 5\%$ level. It can be concluded that the four data come from homogeneous variances.

Hypothesis Testing

After the pre-test and post-test data is obtained, the next step is to test the hypothesis using regression analysis, hypothesis calculation with the following steps:

From the results of testing the first hypothesis, namely, push-up decline training makes a significant contribution to increasing the results of O'brien style bullet throwing for male extracurricular athletes of SMA Negeri 2 Kisaran 2015, based on the results of the calculation of $F_{hitung} = 8.96$ and $F_{tabel} (0.05; 1/8) = 5.32$, so that $F_{hitung} > F_{tabel}$ with a contribution of 57.76%, it can be concluded that the regression equation model is significant.

Based on the hypothesis testing criteria, namely H_0 is rejected and H_a is accepted, then in this study it is concluded that "there is a significant contribution of decline push-up training to increase the results of O'brien style bullet throwing for male extracurricular athletes of SMA Negeri 2 Kisaran 2015".

From the results of testing the second hypothesis, namely, horizontal swing training makes a significant contribution to increasing the results of O'brien style bullet throwing for male extracurricular athletes of SMA Negeri 2 Kisaran 2015, based on the results of the calculation of $F_{hitung} = 11.46$ and $F_{tabel} (0.05; 1/8) = 5.32$, so that $F_{hitung} > F_{tabel}$ with a contribution of 59.29%, it can be concluded that the regression equation model is significant. So in this study concluded that "there is a significant contribution of horizontal swing training to improving the results of O'brien style bullet throwing for male extracurricular athletes of SMA Negeri 2 Kisaran 2015".

From the results of testing the third hypothesis, namely, squat-jump training gives a significant contribution to the improvement of the results of the O'brien style bullet throw of extracurricular male athletes of SMA Negeri 2 Kisaran in 2015, based on the results of the calculation of $F_{hitung} = 5.39$ and $F_{tabel} (0.05; 1/8) = 5.32$, so that $F_{hitung} > F_{tabel}$ with a contribution of 37.21%, it can be concluded that the regression equation model is significant. So in this study concluded that "there is a significant contribution of squat-jump training to the improvement of the results of O'brien style bullet throwing for male extracurricular athletes of SMA Negeri 2 Kisaran 2015".

From the results of testing the fourth hypothesis, namely, push-up decline training, horizontal swing and squat-jump give a significant contribution together to the improvement of the results of O'brien style bullet throwing for extracurricular male athletes of SMA Negeri 2 Kisaran 2015. Based on the calculation of $F_{hitung} > F_{tabel} = H_0$ is rejected with a contribution of 89.72%, it can be concluded that the Multiple regression coefficient is Significant. Based on the criteria for testing the hypothesis, this study concludes that "There is a significant contribution together from decline push-up, horizontal swing and squat-jump exercises to improve the results of O'brien style bullets for extracurricular male athletes of SMA Negeri 2 Kisaran in 2015".

Discussion of Research Results

From the results of testing the first hypothesis that there is a significant contribution from the results of the decline push-up exercise to the increase in the results of the O'brien style bullet throw of extracurricular male athletes of SMA Negeri 2 Kisaran 2015, and then in the second hypothesis also shows that there is a significant contribution from horizontal swing training to increase the results of the O'brien style bullet throw of extracurricular male athletes of SMA Negeri 2 Kisaran 2015, and also in the third hypothesis shows that there is a significant contribution of squat-jump training to increasing the results of O'brien style bullet throwing for extracurricular male athletes of SMA Negeri 2 Kisaran 2015, then in the fourth hypothesis, there is a significant contribution together with push-up decline training, horizontal swing and squat-jump to increasing the results of O'brien style bullet throwing for extracurricular male athletes of SMA Negeri 2 Kisaran 2015.

This shows that in the implementation of the O'brien style bullet throw, the three physical factors above should not be forgotten in training, because the three physical factors are interconnected in bullet throwing. If the three factors mentioned above are owned by bullet athletes, the maximum repulsion results will be easily achieved.

Conclusion

Based on the results of hypothesis testing and discussion of research results, the researcher draws the following conclusions:

1. There is a significant contribution of decline push-up training to improve the results of O'brien style bullet throwing for male extracurricular athletes of SMA Negeri 2 Kisaran 2015.
2. There is a significant contribution of horizontal swing training to improving the results of O'brien style bullet throwing for male extracurricular athletes of SMA Negeri 2 Kisaran 2015.
3. There is a significant contribution of squat-jump training to improving the results of O'brien style bullet throwing for male extracurricular athletes of SMA Negeri 2 Kisaran 2015.
4. There is a significant contribution together from decline push-up, horizontal swing and squat-jump exercises to increase the results of O'brien style bullet throwing for male extracurricular athletes of SMA Negeri 2 Kisaran 2015.

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