

# Explosive Power Exercises Models on Shooting Ability on Football Extracurricular Students at SMAN 2 Lubuk Basuk Agam

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## ABSTRACT

The problem of this study is still lacking and the low capacity of shooting the ball at SMA Negeri 2 Lubuk Basung Kabupaten Agam. The purpose of this study is to determine the effect of exercise form of explosive power to increase the ability of shooting at SMA Negeri 2 Lubuk Basung Kabupaten Agam. This study has two variables, the models of leg muscle explosive power exercises (X) and shooting ability (Y). This type of research is quasi experiment. The population in this study were students of SMA Negeri 2 Lubuk Basung Kabupaten Agam follow extracurricular football amounted to 32 people which chosen by total sampling technique. Thus the entire population sampled ie all students who take extracurricular amounted to 32 people. Instruments in this study using a test target football. Analysis of the data used is normality test and hypotheses testing. The research result is the has significant impact on the improvement of the ability of shooting at goal which gained  $t_h = 4.69 > t_{table} = 0.1591$  at  $\alpha = 0.05$  level of significance. It can be concluded that there is significant influence of the models of leg muscle explosive power exercises against the shooting ability of SMA Negeri 2 Lubuk Basung Kabupaten Agam.

**Keywords:** *Explosive power exercises models, shooting ability, football extracurricular*

## 1. INTRODUCTION

One of the sports achievements is football. In this football sport, shooting is needed on goal, which means here is a shot using the right foot or left foot from a distance outside the penalty area or inside the penalty area. One of the goals of shooting the ball is to score a goal against the opponent.

Although sniper shots are important but in reality the portion of shooting practice on goal is often overlooked, so that often the player fails to shoot the ball into the opponent's goal when he gets a good chance due to various obstacles such as timing is not right, the ball is weak, body position is not right to kick, caused lack explosive power training. The connection is very clear: shooting the ball in addition is also the confidence of the ability of physical conditions such as explosive power and leg muscle strength.

The shot of the ball into the goal has several conditions that must be fulfilled in addition to other requirements namely strength. The terms of the shot included strength to get down to fire and needed a hard shot with a physical condition of explosive power. The hard shot that is meant here is the power generated by leg muscle contraction in a short time.

The role of leg muscle strength is very important, because the strength of the leg muscles which function

to swing the kicking leg backwards is done quickly and in a relatively short time. In order to get a fast and hard kick, physical factors are needed, namely the explosive power of the leg muscles and the strength of the leg muscles. This is due to the fact that the power of explosive power is an important factor and is needed when making a motion in shooting a ball. Therefore, one of the most important principles in training is to build and increase the power of explosives.

Annarino in Arsil, (1999) suggests "explosive power is the strength and speed of dynamic muscle contraction, explosive in a fast time". On the other hand Bompa in Syafruddin, (1999) says "Power is the product of two components, namely strength and speed to produce maximum power in a very fast time". While Suharsono in Arsil (1979) said that explosive power can be trained with training methods including "circuit training, weight training, interval training and so on".

Based on the opinion above, the SMANDA FC team participated in the football championship in 2015 and 2016. Where the competition championship in 2015 the SMANDA FC team won the second place. Whereas in 2016 only able to get into the semifinals. Said the SMANDA FC coach, the SMANDA FC team's performance dropped due to frequent offensive shots, the SMANDA FC forward when he got the chance to fire frequently was slow, not on target and easily

captured by the goalkeeper. This is caused by giving inappropriate training dosage then the method used in training, the training method that has been used by trainers is interval training method and only occasionally provides other training methods that aim to increase leg muscle explosive power which also aims to increase shooting ability on goal, thus causing a lack of variation in motion carried out by students of SMA Negeri 2 Lubuk Basung, Kabupaten Agam. This is supported by observations and observations on students who take football extracurricular exercises that have less leg muscle explosive power, also seen when the SMANDA FC team did match, be it friendship or official, so that you need to exercise the physical condition of the leg muscles explosive power.

According to the researchers' observations, the achievement of the SMANDA FC team could be even better if the SMANDA FC team had leg muscle explosive power and leg speed was better than when they participated in the championship. In the 2016 championship, the SMANDA FC team should be able to win the championship because at the time of the final match the SMANDA FC team was more dominant in the match so there were many opportunities to score. However, the SMANDA FC team's shooting result was still slow and still far from the target and the result of the kick was not weighted so it was easily anticipated by the opponent's goalkeeper. This is due to the lack of leg muscle explosive power and the speed of the legs of the SMANDA FC team. Even though before joining the championship, the SMANDA FC team had followed a programmed training but had not shown maximum results.

According to researchers the shortage of the SMANDA FC team lies in the physical condition factor, namely the explosive power of the leg muscles when shooting. With good leg muscle explosive power, the shooting will be louder and well directed with the explosive power of the kicked ball going fast and directed so that it is difficult to be blocked by the opponent's goalkeeper. Correspondingly, with good leg speed, the process of shooting will be shorter, so the opponent's defender will be difficult to block shooting at the opponent's goal. If the SMANDA FC team's muscle explosive power is not increased, the SMANDA FC team's achievements are difficult to increase.

Based on the description above, it can be concluded that the SMANDA FC team does not have good leg muscle explosive power. For this reason, researchers are interested in conducting research on the SMANDA FC team, especially concerning the Explosive Power Training Model Against Shooting Ability of Football Extracurricular Experiment Study on Students of Lubuk Basung 2 State Senior High School, Agam Regency.

**2. METHOD**

In accordance with the purpose of this study that is to determine the effect of leg muscle explosive power training model with shooting ability, this type of research is experimental study.

The research was conducted at Bukik Bunian Center Sports Sport Center, Lubuk Basung Subdistrict, Agam District. This research is planned according to the training program that has been prepared. With the time of data collection carried out in accordance with the training schedule of football extracurricular, students of SMA Negeri 2 Lubuk Basung, Kabupaten Agam. The population in this study were students of SMA Negeri 2 Lubuk Basung, Agam Regency who participated in football extracurricular activities, as many as there were samples. The sampling technique is done by total sampling technique. Thus the entire population is sampled in this study, namely all students who take part in football extracurricular activities at Lubuk Basung 2 State Senior High School Agam Regency.

**3. RESULTS**

**Shooting Ability to the Goal Pre-test**

Measurement of goal shooting was measured using the target football test conducted on a sample of 32 people, the highest score was 15 and the lowest score was 6, the mean (mean) was 9,094, the standard deviation (standard deviation) was 2,219, median 9, and complete data distribution can be seen in the following table:

**Table 1.** Shooting Capability Table to the Goal.

No	Interval Class	Frequency	
		Absolute	Cumulative
1	≤ 8.99	12	37.50
2	9.00-10.99	13	40.62
3	11.00-12.99	5	15.62
4	13.00-14.99	1	3.12
5	15.00-16.99	1	3.12
Total		32	100

Based on the frequency distribution table above of 32 samples, 12 people (37.50%) had the goal score of the score between 99 8.99, 13 people (40.62%) had the shooting score on the goal between 9-10-10.99, 5 people (15.62%) had The shooting score on the goal is between 11.00-12.99, 1 person (3.12%) has a shooting score for the goal between 13.00-14.99, and 1 person (3.12%) has a shooting score on goal between 15.00-16.99.

**Shooting ability to the Post-test goal**

Shooting to the goal is measured using the target football test. From the tests and measurements obtained the highest score of 15 and the lowest score of 7, resulting in a mean of 11,156, a standard deviation of 2,142, a median of 11, the complete data leaflet can be seen in the following table:

**Table 2.** Frequency Distribution Table of Shooting Ability to Goals.

No	Interval Class	Frequency	
		Absolute	Cumulative
1	7.00-8.99	4	12.50
2	9.00-10.99	9	28.13
3	11.00-12.99	9	28.13
4	13.00-14.99	8	25.00
5	15.00-16.99	2	6.25
Total		32	100

Based on the frequency distribution table above from 32 samples, 4 people (12.5%) had the goal score on the goal between 7.00-8.99, 9 people (28.13%) had a score on the goal between 9-10-10.99, 9 people (28.13%) having a goal score on goal between 11.00-12.99, 8 people (25%) have a shooting score on goal between 13.00-14.99, and 2 people (6.25%) have a shooting score on goal between 15.00-16.99.

**Data Analysis**

Before testing the hypotheses proposed, the requirements for data analysis are firstly tested, namely the normality test of each data from the variables. Data normality test of the variables is done by using the liliefors test, which is the data leaflet normality test.

**Data Distribution Normality Test**

The results of the test analysis of the normality of the data distribution of each variable are presented in the table 3:

**Table 3.** Summary of Data Distribution Normality Test with Liliefors Test.

Variabel	N	Lo	L <sub>tabel</sub>	Distribusi
Shooting Ability to Go (Pre-test)	32	0,1222	0,1566	Normal
Shooting Ability to Go (Post-test)	32	0,1117	0,1566	Normal

The table above shows that the test results for the measurement ability of the Pre-test Lo score = 0.1222 with n = 32, while the L<sub>tabel</sub> on the level of significant testing  $\alpha = 0.05$  obtained 0.1566 which is greater than Lo so it was concluded that the shooting score the goal

comes from a population that is normally distributed. (For more details, see attachment).

For shooting ability, Post-test scores Lo = 0.1117 with n = 32, while L<sub>tabel</sub> on the level of significant testing  $\alpha = 0.05$  obtained 0.1566 which is greater than Lo, so it was concluded that the ability to shoot on goal came from the normal distribution (For more details, see attachment).

**Hypothesis Testing**

The hypothesis proposed is that there is a significant effect of leg muscle explosive power training on shooting ability in students of SMA Negeri 2 Lubuk Basung, Agam Regency. Based on comparative analysis with the mean difference test formula (t test), the results of the mean difference test analysis (t test) are obtained as follows.

**Table 4.** Results (t test).

Df= (N-1)	tcount	t <sub>tabel</sub> $\alpha = 0,05$	Conclusion
31	4,69	0,1591	Signifikan

Note :

th = different test coefficients mean count  
ttab = test coefficient different mean table

The results of the analysis of the mean difference test stated that there was a significant effect of the leg muscle explosive power training model (X) on the shooting ability (Y) of students of SMA Negeri 2 Lubuk Basung, Kabupaten Agam which was significant. This is based on the results of the analysis of the mean difference test, which obtained  $th = 4.69 > t\text{table} = 0.1591$  at the significance level  $\alpha = 0.05$ , it can be concluded that there is a significant effect of the leg muscle explosive power training model on shooting ability students of SMA Negeri 2 Lubuk Basung, Agam Regency.

**4. DISCUSSION**

The discussion in this study was carried out based on theoretical studies and statistical calculations and referred to the conclusions of the analysis that had been conducted, then further discussion would be conducted. In this discussion, will refer to the hypothesis proposed in the study.

Based on the results of research conducted in the field, the explosive power training model used to improve shooting skills was obtained entirely from the results of the study and viewed from the classification table of shooting ability in students of SMA Negeri 2 Lubuk Basung, Kabupaten Agam, was in the good category.

From the analysis of the mean difference test (t) that has been done can be proven that there is an influence of the explosive power training model on shooting ability. In this study the explosive power training model was carried out to students of Lubuk Basung 2 State Senior High School in Agam Regency, this was based on the curiosity of the researcher with the leg muscle explosive power training model on the shooting ability of the student.

Before being given treatment to the sample, an initial test is conducted to determine the shooting ability of students of SMA Negeri 2 Lubuk Basung, Agam Regency. Based on the results of the shooting ability test, it turned out that the shooting ability of students at SMA Negeri 2 Lubuk Basung, Kabupaten Agam from 32 samples was 13 people (40.62%) who had the most shooting scores on goal between 9.00-10.99. Then given the form of leg muscle explosive power training, then the final test was performed using the same instrument. From these measurements obtained results with an average shooting ability of 32 samples that increased the most shooting ability, namely 11.00-12.99 as many as 9 people (28.13%) and 13.00-14.99 as 8 people (25%).

Based on the exercises conducted for 16 meetings, the results showed that there was an influence of the explosive power training model on shooting ability. This is proven significantly, where after the "t" test results obtained  $t_{count} = 4.69 > t_{table} = 0.1566$ .

From the analysis above the results of the analysis can also be concluded that there is an effect of the leg muscle explosive power training model on the shooting ability of students of SMA Negeri 2 Lubuk Basung, Kabupaten Agam. Programmed and continuous exercises, the more often you do the leg muscles explosive power training, the better the leg muscles explosive power will affect students' shooting ability.

As for the implementation of leg muscle explosive power training, not all students showed an increase in leg muscle explosive power because some students were less serious in carrying out the exercises and some were often absent from training, resulting in no explosive power to do the Kwawa shooting. during the final test.

## 5. CONCLUSION

Based on data analysis and discussion, it can be concluded that, leg muscle explosive power training model has a significant effect on increasing the ability of shooting to the goal. Thus it can be concluded that the leg muscle explosive power training model has a significant effect on improving the ability of shooting students of Lubuk Basung 2 State Senior High School Agam District.

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