

Contribution Of Arm Muscle Power , Leg Muscle Power , And Hands Eye Coordination On Ability Jump Shoot On Students Ekstrakurikular Sman 1 Pasir Penyus Basketball

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Abstract

The goal to be achieved in this study was to find out how much the contribution of arm muscle power, leg muscle power and hand eye coordination to the ability to jump shoot in basketball extracurricular students at SMAN 1 Pasir Penyus. This type of research is research using multiple linear regression tests , The multiple linear regression method aims to determine how much influence the independent variables have on the existing dependent variable. In this research, the variable (X_1) is arm muscle power, variable (X_2) is leg muscle power, variable (X_3) is hand eye coordination and the dependent variable (Y) is jump shoot ability . The research was conducted at SMAN 1 Pasir Penyus on basketball extracurricular students . SMAN 1 Pasir Penyus is located right in Indragiri Hulu Regency . The time used to carry out this research was for two days starting from the 5th of March 2023 And the 9th of march 2023 . The sample was taken by Total Sampling, where the entire population was used as a sample, amounting to 12 extracurricular basketball students at SMAN 1 Pasir Penyus . The instruments to be used in this study were the Two Hand Medicine Ball Chest Pass Test, the Vertical Jump Test, the Hand Eye Coordination Test and the Jump Shoot Ability Test . Based on the calculation results, there is a contribution of arm muscle power, leg muscle power and hand eye coordination to the ability to jump shoot in basketball extracurricular students at SMAN 1 Pasir Penyus by 9.4% with a score in the low category .

Keywords: Arm Muscle Power , Leg Muscle Power , Hand Eye Coordination, Jump shoot

INTRODUCTION

in the world, one of which is football basketball. Ball Basketball is a ball game in groups consisting of two teams each consisting of five people competing to score points by putting as many balls into the basket as possible. (Candra & Wahyudi, 2020) . Basketball is the most popular sport and game in the world. The aim of the game of basketball is to win (Candra et al., 2021) . Ball sports Basketball can be played on an open court (*outdoor*) or closed court (*indoor*) , although in general professional matches are held on a closed court (*indoor*) .

At a ball game In basketball, there are several basic techniques, namely *shooting* , *passing* and *dribble* . Of the several techniques above, *shoot* (shooting) is the core technique of the game because *shoot* (shooting) is any effort to get points by putting the ball into the basket. There are variations in the *shooting* technique , including *jump shoot*, *lay-up*, *hook shoot* and all kinds of movements to put the ball into the basket. In accordance with the core of the ball sports game basketball is to enter the ball as much as possible into in the basket, it can be said that it is this *shooting technique* that needs attention. Every player must have good shooting skills . For this reason, this shooting technique *needs* to be trained, one of which is often trained, namely the *jump shoot technique* . If a player has the ability to do a good *jump shoot* , *then he can be a threat to the opposing team*.

Ball game Basketball is a sports game that is very much in demand from all walks of life, because of the ball game basketball can be done by children, para adolescents, as well as adults (Mukhtarsyaf et al., 2019) . Of course in coaching or training requires the underlying

knowledge. Training in this regard is an object that will increase potential and achievement through a planned training process (Syafuruddin, 2011) .

In addition to practicing to improve technical and tactical skills, an adequate level of physical condition is a factor that must also be considered in sports coaching. The best ability to acquire in sports activities is speed (Henjilito, 2017) . There are several ways to get the ball into the basket. Usually football players Basketball shoots at a distance close to the basket because it has the highest shooting accuracy (Oliver, 2009) . There are several *shooting techniques* in ball games basketball, one of which is *jump shoot* . The *jump shoot* technique is a *shooting technique* which is one of the abilities that is often performed by a soccer athlete basketball because this shot is difficult to block and outwit opposing defenders because this shot is made from a long distance like a three point shot and can be done in any position (Adina, Fachru et al., 2017) .

Jump shoot or jump shot is a very important skill and to have this skill requires systematic and consistent training stages (Hasibuan, Halim et al., 2018) . *Shooting* techniques are often used in ball matches basketball by athletes including *the jump shoot* and *lay up shoot* (Condolences, Adefriesta, Lesta & Harwanto, 2020) . One of the *good shooting* skills is the *jump shoot technique* (Prananta, I Gusti, Cahya, Ngurah et al., 2015) . When doing a *jump shoot movement* , the arm muscles play a role in the series of movements. Contraction of the muscles that make the arm capable of shooting. Muscle contractions help move the bones of the arms and muscles also provide power *in jumping shoots* . When carrying out a movement, the muscles will contract which causes tension in the muscles so that the muscles shorten and can move the bones (Sabri, 2020) . Oh football Basketball is a sport that has the intensity, strength and speed of performance of leg muscles such as running, jumping, holding the weight received and so on. Leg muscle *power* is seen by the presence of muscle contractions that suddenly become fast and maximal, such as when the body is pushed up or pushed back. forward direction (Primary, I Gede et al., 2019) .

Trying to get a high jump must require good *explosive power of the leg muscles* (Orlando, 2018) . So to produce a good *jump shoot movement* requires a good level of leg muscle *power as well*. High jumps can make it difficult for opponents to reach the ball or block the ball, while players will get an open shooting space. From the description above for leg muscle *power* also needs to be trained in order to get a high jump. Coordination is one component of the physical condition that sports athletes must have. In carrying out several movements that are strung together into one effective movement pattern according to the desired goal, this is the meaning of self-coordination. According to (Suratmin, 2021) coordination is the athlete's ability to combine several movements correctly without causing tension.

Athletes who have good eye and hand coordination skills will facilitate a series of *jump shoot movements* . An athlete's ability to combine several movements into one pattern can make it difficult for opponents to guard against them. The coordination in question is when the ability to combine movements between the eyes and hands, when the cooperation between the eyes and hands when doing a *jump shoot* (Nurjamal et al., 2020) .

Based on the results of observations that have been made, there are several problems found. During the execution of the *jump shoot* , there are several mistakes that often occur, such as the *jump shoot movement* which still goes wrong, when releasing the ball, the eye 's view is blocked by a basketball, the ball is released when the body position has not reached its highest point, and still many have poor arm muscle strength.

From the above problems, this study aims to determine 1) the contribution of arm muscle *power* to the ability to *jump shoot in* extracurricular ball students basketball SMAN 1 Pasir Penyu 2) Contribution of leg muscle *power* to the ability to *jump shoot in* ball extracurricular

students basketball at SMAN 1 Pasir Penyu 3) the contribution of coordination to the *jump shoot ability* of extracurricular ball students basketball SMAN 1 Pasir Penyu 4) contribution of arm muscle power , leg muscle power and coordination to the ability to jump shoot in ball extracurricular students SMAN 1 Pasir Penyu basketball

RESEARCH METHODS

Research in general is a process of collecting and analyzing data that is carried out systematically and logically in achieving certain goals (Sudaryono, 2016) . To achieve the research objectives the writer wanted, this research was conducted using the multiple linear regression test method. The multiple linear regression method aims to determine how much influence the independent variables have on the existing dependent variable. In this research, the variable (X_1) is arm muscle power , variable (X_2) is leg muscle power , variable (X_3) is hand eye coordination and the dependent variable (Y) is *jump shoot ability* .

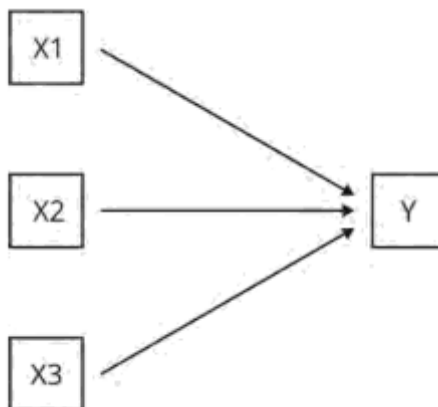


Figure 3. 1 Design Research X_1 , X_2 , X_3 and Y
(Djalli, 2021)

Population is object from whole in study or is amount whole from object whose character will researched . Population can form companies , people, things even institution by nature can counted . According to (Azwardi, 2018) population is region generalization whole object research that has quality And characteristics certain set _ by researchers so they can interesting conclusion . Population from study This is student SMAN 1 Pasir Penyu basketball extracurricular. Sample is part from the population obtained from method certain later _ considered as representative from whole population And become focus in study (Rosyidah & Fijra, 2021) . However remember small population _ so sample study This taken from whole existing population _ or *total sampling* . So study take sample as many as 12 students SMAN 1 Pasir Penyu basketball extracurricular. As for the research instrument, the independent variable (X_1) is arm muscle power , the independent variable (X_2) is leg muscle power , the independent variable (X_3) is eye-hand coordination and the dependent variable (Y) is the ability to jump shoot . **Two Hand Medicine Ball Chest Pass Test** (Narlan & Juniar, Dicky, 2020) , **Vertical Jump Test** (Narlan & Juniar, Dicky, 2020) , **Hand Eye Coordination Test** (Rohadi et al., 2021) , **Jump shoot Ability Test** (Faruqi, Fahrul, Al, 2014)

In accordance with the formulation of the problem made to determine the contribution of arm muscle power (X_1) , leg muscle power (X_2) and hand eye coordination (X_3) to *jump shoot ability* (Y), then to simplify data calculations assisted by using a computer . The program used is a data processing program, namely SPSS (*statistical package for the social sciences*).

RESULT AND DISCUSSION

This study aims to determine the contribution of arm muscle *power* , leg muscle *power* and eye-hand coordination to *jumpshoot ability* in basketball extracurricular students at SMAN 1 Pasir Penyau. To know this, it will be discussed successively regarding the description of the data from each variable, testing the hypothesis and discussing the research that has been done.

The data that has been collected is then analyzed, the variable X_1 is arm muscle *power* , variable X_2 leg muscle *power* , variable X_3 hand eye coordination and variable Y is the ability to *jump shoot* . The hypotheses to be tested are:

1) There is a Contribution of X_1 to Y (Arm Muscle Power Against Jump Shoot Ability)

From the calculation results it is known that the correlation value of arm muscle *power* with the results of the ability to *jump shoot* in basketball extracurricular students at SMAN 1 Pasir Penyau is obtained by the value of $r_{\text{count}} = 0.06 < r_{\text{table}} = 0.632$ so that there is a contribution of arm muscle *power* to the ability to *jump shoot* on extracurricular basketball students at SMAN 1 Pasir Penyau with a very low category contribution of 0.36%. This means that variable Y (*jump shoot*) is influenced by variable X_1 (arm muscle *power*) of 0.36%, the remaining $100 - 0.36 = 99.64\%$ is influenced by other factors.

Table 4. 1 Results Calculation of X_1 (Muscle Power Arm) and Y (Ability Jump Shoot)

R Count	R ² X ¹⁰⁰ %	Information
0.06	0.36%	Very low

2) There is a contribution of X_2 to Y (Muscle Power Limbs Against Jump Shoot Ability)

From the calculation results it is known that the correlation value of leg muscle *power* with the results of the ability to *jump shoot* in basketball extracurricular students at SMAN 1 Pasir Penyau is obtained by the value of $r_{\text{count}} = -0.07 < r_{\text{table}} = 0.632$ so that there is a contribution of arm muscle *power* to the ability to *jump shoot* on extracurricular basketball students at SMAN 1 Pasir Penyau with a very low category contribution of 0.49%. This means that the Y variable (*jump shoot*) is influenced by the X_2 variable (leg muscle *power*) of 0.49%, the remaining $100 - 0.49 = 99.51\%$ is influenced by other factors.

Table 4. 2 Results Calculation of X_2 (Muscle Power Limbs) and Y (Ability Jump Shoot)

R Count	R ² X ¹⁰⁰ %	Information
-0.07	0.49	Very low

3) There is a Contribution of X_3 to Y (Hand Eye Coordination on Jump Shoot Ability)

From the calculation results it is known that the correlation value of hand eye coordination with the results of the ability to *jump shoot* in basketball extracurricular students at SMAN 1 Pasir Penyau is obtained by the value of $r_{\text{count}} = 0.314 < r_{\text{table}} = 0.632$ so that there is a contribution of arm muscle *power* to the ability to *jump shoot* in students SMAN 1 Pasir Penyau extracurricular basketball with a low category contribution value of 9.8%. This means that the variable Y (*jump shoot*) is influenced by the variable X_2 (leg muscle *power*) by 9.8%, the remaining $100 - 9.8 = 90.2\%$ is influenced by other factors.

Table 4. 3 Results Calculations X_3 (Hand Eye Coordination) and Y (Ability Jump Shoot)

R Count	R ² X ¹⁰⁰ %	Information
0.314	9,8	Low

4) There is a contribution of X_1 , X_2 and X_3 to Y (Muscle Power Legs, Leg Muscle Power and Hand Eye Coordination on Jump Shoot Ability)

From the calculation results it is known that the large correlation values of arm muscle power , leg muscle power and hand eye coordination with the results of the ability to jump shoot on basketball extracurricular students at SMAN 1 Pasir Penyu jointly (simultaneously) obtained the value of $r_{\text{count}} = 0.308 < r_{\text{table}} = 0.473$ so thus there is a contribution of arm muscle power , leg muscle power and hand eye coordination to the ability to jump shoot in basketball extracurricular students at SMAN 1 Pasir Penyu with a low category contribution value of 9.4%. This means that the Y variable (jump shoot) is influenced by the variable X_1 (arm muscle power) X_2 (leg muscle power) X_3 (Hand Eye Coordination) of 9.4%, the remaining $100 - 9.4 = 90.6\%$ is influenced by factors other.

Table 4. 4 Results Calculation of X_1 (Muscle Power Arm) X_2 (Muscle Power Limbs) X_3 (Hand Eye Coordination) and Y (Ability Jump Shoot)

R Count	R ² X ¹⁰⁰ %	Information
0.308	9.4%	Low

Discussion

Based on the results of data analysis, there is a contribution of arm muscle power to the ability to jump shoot in basketball extracurricular students at SMAN 1 Pasir Penyu with a very low category contribution of 0.36%. This means that variable Y (jump shoot) is influenced by variable X_1 (arm muscle power) of 0.36%, the remaining $100 - 0.36 = 99.64\%$ is influenced by other factors. Arm muscle power has the potential to provide impetus to ball shots that are pushed towards the basket. Why is that, because if the push or strength is not optimal, it is likely that the ball will not reach the basket or the ball will not hit the opponent's basket. As for carrying out a series of movements in the jump shoot technique , the one that expends the most energy is the arms. Because to shoot towards the basket requires maximum power and also the distance between the jump shoot and the basket affects how much power is expended.

The results of data analysis also showed that there was a contribution of arm muscle power to the ability to jump shoot in basketball extracurricular students at SMAN 1 Pasir Penyu with a very low category contribution of 0.49%. This means that the Y variable (jump shoot) is influenced by the X_2 variable (leg muscle power) of 0.49%, the remaining $100 - 0.49 = 99.51\%$ is influenced by other factors. Leg muscle power is very decisive in carrying out a series of jump shoot technique movements . A high jump will make it easier for the basketball player to place the ball and successfully shoot without interference from the opponent, getting bigger into the opponent's basket. In addition, if the power of the leg muscles is very good, then all the movements carried out will be balanced and also act as a support for the body.

Furthermore, there is a contribution of arm muscle power to the ability to jump shoot in basketball extracurricular students at SMAN 1 Pasir Penyu with a contribution value in the low category of 9.8%. This means that variable Y (jump shoot) is influenced by variable X_3 (hand eye coordination) of 9.8%, the remaining $100 - 9.8 = 90.2\%$ is influenced by other factors. Good eye-hand coordination means that the basketball player's ability to perform a series of jump shoot movements will improve, where eye-hand coordination is one of the components of physical condition that plays an important role in the performance of the jump shoot movement . On the other hand, if a basketball player has bad eye-hand coordination, it will affect the series of movements of the jump shoot ability .

Overall the results of the study showed that arm muscle power , leg muscle power and hand eye coordination affected the ability to jump shoot basketball, this indicated that arm muscle power , leg muscle power and hand eye coordination had a contribution to the ability of extracurricular basketball students at SMAN 1 Pasir Penyu which has a contribution value of

9.4% in the very low category and the remaining 90.6% is influenced by other factors. The game of basketball must have elements of good physical condition. Physical condition is very important for players' skills in carrying out various basketball game techniques. The element of arm muscle *power* will be very helpful in performing the *jump shoot technique* because its role is to throw the ball or shoot the ball on target to the opponent's basket. The element of leg muscle *power also plays a role in carrying out the jump shoot technique* to help players jump high so that the player gets a very wide shooting space and it is also very difficult for the opponent to reach the ball because the player jumps very high. Hand eye coordination also plays a role in the ability *to jump shoot* to produce an accurate shot at the opponent's basket.

The results of this study are relevant to the results of research conducted by (Prawiro et al., 2013) that there is no significant relationship between arm muscle *power and shooting* in basketball with a value of 0.137. Then the results of this study are also relevant to the results of research conducted by (Faozi & Yuliantini, 2021) that there is no significant relationship between leg muscle *power and shooting* in a basketball game with a value of 0.278. And the results of this study are also relevant to the results of research that has been conducted by (Rosmi, 2017) that there is no significant relationship hand eye coordination to *shooting* in a basketball game with a value of 0.143. The results of this study are relevant to the results of research conducted by (Afriani, 2017) that there is no significant relationship between arm muscle *power and the ability to jump shoot* with a value of 0.25.

Based on the results of this study it is proven that there is a contribution of each variable with a low category in basketball extracurricular students when doing *jump shoots* . The results of this study indicate that there are weaknesses in the physical condition of the basketball extracurricular students at SMAN 1 Pasir Turtle. The physical condition *of the power* and coordination of the basketball extracurricular students at SMAN 1 Pasir Penyu is still in the very low category.

CONCLUSION

Based on the results of the research that has been done, the following conclusions can be drawn: 1) There is a contribution of arm muscle *power to the ability to jump shoot* in basketball extracurricular students at SMAN 1 Pasir Penyu by 0.36% with a value in the very low category, 2) There is a contribution leg muscle *power on the ability to jump shoot* in basketball extracurricular students at SMAN 1 Pasir Penyu by 0.49% with a very low category value, 3) There is a contribution of hand eye coordination to the ability to *jump shoot* for extracurricular basketball students at SMAN 1 Pasir Penyu by 9.8% with scores in the low category, 4) There is a contribution of arm muscle *power , leg muscle power* and hand eye coordination to the ability to *jump shoot* on extracurricular basketball students at SMAN 1 Pasir Penyu extracurriculars by 9.4% with a low category value. As for the suggestions in this study, it is hoped that the basketball extracurricular students of SMAN 1 Pasir Penyu will be even more active in practicing both physical condition training and practicing techniques in playing basketball so that they can improve their skills and abilities in playing. must pay attention to the training material provided. Physical training and technical training must be balanced so that the abilities and skills of students will improve. It is hoped that the SMAN 1 Pasir Penyu school will pay attention to the completeness of the facilities and infrastructure for extracurricular basketball training so that students can improve their achievements in the field of basketball sports

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