

The Effect of Triceps Pressdown and Seated Rowing Exercises on Muscle Strength

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Abstract

The aim of the study was to determine the effect of the triceps press down, seated rowing and endurance exercise method on increasing arm muscle strength. A 2 x 2 factorial method was used. The research sample was 24 participants. The pull up test instrument for endurance and the digitec bow holding test were used. ANOVA was used for data analysis $\alpha = 0.05$. Results are as follows (1) there is a significant difference between the triceps press down exercise and the seated rowing exercise on the increase in arm muscle strength. (2) There is a significant difference between athletes who have high and low muscle endurance on the increase in arm muscle strength. (3) There is a significant interaction between triceps press down exercise and seated rowing exercise with muscle endurance (high and low) on arm muscle strength in archery athletes.

Keywords

triceps press down exercises; seated rowing; endurance; arm muscle strength



I. Introduction

Sports involve person's physical and psychological activities that are useful for maintaining and improving the quality of one's health. One of the government's efforts to develop sports is to foster archery. Archery is a sport that has its own characteristics compared to other sports, although in its development it is less attractive to the public, but recently archery has begun to be of interest to all Indonesians (Yachsie, 2019: 80). Pelana & Oktafiranda (2017: 3) defines archery as an activity that involves using a bow to shoot arrows. Until now, no one knows, since when people started shooting, but it is suspected that archery has been done by humans since thousands of years ago. Several books suggest that the bow and arrow since 1600 AD were the main weapon of every country and nation for war. Evidence shows that the history of archery started 5000 years ago which was originally used for hunting then developed as a weapon in battle. Archery is currently being developed in various provinces in Indonesia. This sport is no longer foreign to the community, the many archery sports clubs, extracurricular activities and Student Education and Training Centers in Indonesia are a form of efforts by archery sports people to popularize as well as seek and breed talented athletes who are expected to reach international standards through planned exercise programs.

According to Astuti et al (2019) Education is an obligation of every human being that must be pursued to hold responsibilities and try to produce progress in knowledge and experience for the lives of every individual. Education is one of the efforts to improve the ability of human intelligence, thus he is able to improve the quality of his life (Saleh and Mujahiddin, 2020). Education is expected to be able to answer all the challenges of the times and be able to foster national generations, so that people become reliable and of high

quality, with strong characteristics, clear identities and able to deal with current and future problems (Azhar, 2018).

Basically, archery is a combination of sports and arts. It is a sport because it uses functional muscles such as the trapezius, triceps, and deltoid and also requires physical endurance. It is an art because it requires a subtle touch of the soul, patience, tenacity, and mental endurance (Nawir, 2011: 123). Factors such as concentration, coordination, strength, reaction, endurance, balance, hand muscle strength, and arm muscle endurance are crucial in producing a good and correct basic archery technique. In the archery sport, the results of performance and achievement can be seen in the score, namely the number of arrows struck on the target face or target.

Archery sport does not require much movement skills and archery is actually a simple sport. Archery is a sport that requires shooting arrows into the target as precisely as possible. Archery sports of course involve the muscles in drawing the bow which must be given a particular concern, because these muscles work very extra in pulling and holding the weight of the bowstring which is quite heavy and continues continuously or repeatedly in a series of archery movements. Therefore, these muscles must have strength and endurance in order to be able to pull the bowstring motion consistently and steadily in accordance with the axis of motion. The muscles must be trained and developed in archery are the shoulder muscles, the muscles of the pulling fingers, the muscles of the forearm, the wrist, the abdominal muscles, and leg muscles (Yulianto, 2015: 28).

Similarly, by Prasetya & Siswantoyo (2018: 409) expressed that "the strength and endurance of the arm muscle is very essential because it helps to determine the criteria of the arc suitable for archers". The dominant basic technique of holding the bow (holding) is done using the muscles of the arm not assisted by the body, the archer must remain concentrated so that the archery stance does not change into a straight line of archery. Tinazci (2011: 290) explained that "Shooting in archery can be summarized as drawing the bow, aiming and releasing. Archery can be described as a comparatively static sport requiring strength and endurance of the upper body, in particular the forearm and shoulder girdle". Yenni, Ramadi, & Kristi, (2012: 3), claimed that: "The most important and specific muscles needed to pull and hold the weight of the bow pull are those of the trapezius, biceps, rhomboid, deltoid, and triceps fingers". The rhomboid, scapular levator, and trapezius are the main muscle groups used for back tension and when used correctly, are responsible for holding the bow back at full draw. The latissimus dorsi is the largest muscle in the back. It extends from the pelvis to the middle back and attaches to the arms. Its main function is to pull the arm to the side, extend the arm back, and also turn the arm inward (Sharma, Singh, & Singh, 2015: 34).

Based on the results of observations of archery athletes in Banyumas Regency, the lack of understanding of variations in physical condition training for the archery sport of some athletes was laziness, then there are still athletes who feel tremors when shooting in their left hand. Therefore, the tremors experienced will have an effect against arrow grouping which causes a lack of accuracy in archery and some do not want to do the training because some coaches and senior athletes think that physical training for archery is only in the field by shooting as many arrows as possible. But to help the archer perform better technique and get stable results, the trainer must provide the training with the right physical condition using the right variety of exercises. The right body position will increase the level of concentration which, when holding stance (archery stance), will have a calming effect when wind comes, when aiming (aiming) the hand will not be carried away by the wind because the body has a high balance and then the release (releasing the arrow) will produce maximum results.

For this reason, it is necessary to develop an appropriate training program. According to Harsono (2015: 39) the main objective and target of training is to help athletes improve their skills and achievements as much as possible. To achieve this, there are 4 aspects of training that need to be carefully considered and trained by athletes, namely (1) physical training, (2) technical training, (3) tactical training, (4) mental training. Compiling a physical exercise program for archery requires dominant elements that become the sport's needs. In order to describe the needs of the physical condition of archery, it is necessary to observe the performance of athletes in a competitive atmosphere, because the results of the competition are parameters of success in a training. There are various kinds of physical conditioning in order to increase muscle strength and endurance.

Archery athletes not only have great strength, but also must be supported by good endurance so that the athlete's performance is not only good at the beginning of the match, but consistent until the end of the race and also to produce a hard and accurate arrow shot which is determined once by the condition of muscle strength, joints, and body balance. Therefore, muscle strength and joint flexibility must be absolutely in good condition so that the results obtained can be optimal (Spratford & Campbell, 2017). Especially in archery, success or achievement is influenced by physical conditions. One indication of an athlete's physical condition that greatly influences archery achievement is arm muscle strength (Choi & Ok, 2016; Park et al., 2016)

Irianto (2018: 5) explained that endurance is the ability to do work for a long time. The definition of muscle endurance is the capacity of a group of muscles to contract repeatedly or consecutively within a certain period of time against a load. According to Nawir (2011: 124) "arm muscle strength is the strength generated by the arm muscles moving according to the degree of freedom they have". Arm muscle strength is a person's ability to exert maximum energy in one effort, according to the training principles applied in this study. This weight training must be carried out in such a way that the athlete must exert maximum or nearly maximum power to hold the load. This load gradually increases so that muscle development stops at a certain weight (Harsono, 2015). Therefore, increasing the endurance of the arm muscles and the physical condition of the archer are considered very important to achieve optimal results. Based on the description above, the author notices the need to conduct this research with the aim of increasing endurance and arm muscle strength in archery athletes and decides to investigate the effect of triceps press down and seated rowing exercise on muscle strength.

II. Research Method

2.1 Types of Research

This study used an experimental method with a 2x2 factorial research design. According to Sukmadinata (2017: 207), experimental research is research that is intended to determine whether or not there is a result of something imposed on the subject investigating. The experiment used was a 2x2 factorial design. Sugiyono (2015: 46) states that factorial is an action against one or more variables that are manipulated simultaneously in order to study the effect of each variable on the dependent variable or the effect caused by the interaction between several variables. The research design design can be seen in Table 1:

Table 1. Design Factorial Design		
Durability (B)	Exercise (A)	
	<i>Triceps</i>	<i>Seated</i>
	<i>Press (A1)</i>	<i>Rowing (A2)</i>
High (B1)	A1. B1	A2. B1
Low (B2)	A1. B2	A2. B2

Information:

A1B1: The group of athletes with high endurance who did the triceps press exercise

A2B1: The group of athletes who had high endurance who did the seated rowing exercise

A1B2: The group of athletes with low endurance who did the seated rowing exercise

A2B2: The group of athletes who had low endurance who did the triceps press exercise

2.2 Research Target / Subject

The population used in this study was archery athletes with a sample of 26 athletes. In this study, to obtain the number of respondents, a sample size was taken using the formula from Slovin (Sujarweni, 2015: 16). The total sample in this study was 24 athletes. The sampling technique used in this study was simple random sampling technique. Of the total sample used, 24 people were then divided into 2 groups with the highest and lowest results based on attributive variables (12 people with the highest test results and 12 people with the lowest tests). Research variable. The variables in this study consisted of two independent manipulative variables, namely triceps press and seated rowing exercises, while attributive independent variables were endurance (high and low). Then the dependent variable is the arm muscle strength.

2.3 Data Collection Instruments and Techniques

The instrument for measuring the strength of the arm muscles was the pull up test. Implementation: take a hanging position, hands grasping the bar facing forward. Pull your body up until your chin is over the bar, lowering it back down until your arms are straight. Repeat as many times as possible for 1 minute. When performing the up and down movement the knees should not be bent, kicked or other movements. Assessment: Count the amount that can be done correctly without intermittent breaks (Fenanlampir & Faruq, 2015: 60).

The instrument measuring the endurance of the arm muscles was Holding Bow Digitec Test. *Holding Bow Digitec Test* is a new innovation in measuring arm muscle strength and arm muscle endurance for archery which was developed based on existing tools / tests, namely the Dacin pull test to measure arm muscle strength and the Holding Bow test to measure the endurance of the arm muscles. This tool was developed in digital form and is supported by sensors and memory with sufficient capacity for accurate measurement results. The digital bow holding test is more effective and accurate because the measurement process is carried out the same as when an archery athlete makes a real archery move. The purpose of the Holding Bow Digitec Test is to measure the strength of the arm muscles in units (Kg) and measure the endurance of the arm muscles in units (seconds) at the same time. Assessment: when pulling, the tool is inconsistent: the position is out of balance, the left arm bends; The time running on the appliance has stopped. Press the black button to continue the next measurement process, make sure the weight and time

indicator on the tool is back at "0" and the data on the previous measurement will be stored in the memory of the Holding Bow Test tool automatically.

2.4 Data Analysis Technique

Hypothesis testing is done by using two-way ANOVA. Multiple variance analysis techniques are often called two-way analysis of variance techniques, or variance analysis techniques for related (correlated) samples. This multiple variant analysis technique is used to distinguish the mean of several data distributions for the group of research subjects carried out at once for two types of treatment variables (Budiwanto, 2017: 141). If it is proven that there is an interaction, a further test will be carried out, namely the Tukey test, using the SPSS version 20.0 for windows software program with a significance level of 5% or 0.05.

III. Results and Discussion

3.1 Results

The results of the research and discussion will be presented sequentially, including: (1) research data, (2) analysis prerequisite test, and (3) hypothesis testing. The hypothesis testing will be presented sequentially, including: (a) differences in the effect of triceps press down training and seated rowing training on the increase in arm muscle strength in archery athletes; (b) differences in the effect of high and low muscle endurance on increasing arm muscle strength in archery athletes ; and (c) the interaction between triceps press down exercise and seated rowing exercise with muscle endurance (high and low) on arm muscle strength in archery athletes.

The data from the research results are in the form of pretest and posttest data on arm muscle strength. The research process will take place in three stages. The first stage is to perform an endurance test to differentiate between high and low, the second stage is a pretest to get initial data on the assessment of muscle endurance and arm muscle strength. The second stage, the third stage, namely posttest, was carried out to compare with pretest data whether there was an increase or not.

The descriptive statistics of the pretest and posttest arm muscle strength of archery athletes are presented in Table 2:

Table 2. Descriptive Statistics of the Pretest and Posttest of arm muscle strength			
Method	Muscle Endurance	Pretest	Posttest
Triceps Press	High (A1B1)	16.00 ± 0.63	21.67 ± 1.21
	Low (A1B2)	14.00 ± 1.09	15.83 ± 1.17
Seated Rowing	High (A2B1)	16.00 ± 0.89	17.67 ± 0.82
	Low (A2B2)	14.00 ± 0.89	17.83 ± 0.98

Displaying in diagrammatic form, the arm muscle strength data is presented in Figure 1:

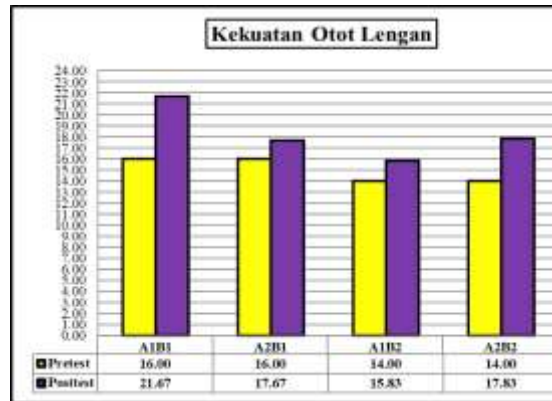


Figure 1. Diagram of Pretest and Posttest Arm Muscle Strength

Based on the graph above, we can see that the arm muscle strength of the A1B1 group has an average pretest of 16.00 and an increase in the posttest is 21.67, the A2B1 group has an average pretest of 16.00 and an increase in the posttest is 17.67, the A1B2 group had an average pretest of 14.00 and experienced an increase at the posttest of 15.83, the A2B2 group had an average pretest of 14.00 and an increase in the posttest was 17.83.

a. Prerequisite Test Results

1. Normality Test

The data normality test in this study used the Kolmogorov Smirnov method. The data summary is presented in Table 3:

Table 3. Normality Test

Data		<i>p</i>	Information
<i>Pretest</i>	A1B1	0.518	Normal
	A2B1	0.968	Normal
	A1B2	0.573	Normal
	A2B2	0.968	Normal
<i>Posttest</i>	A1B1	0.956	Normal
	A2B1	0.682	Normal
	A1B2	0.926	Normal
	A2B2	0.646	Normal

Based on the statistical analysis of the normality test that has been carried out using the Kolmogorov Smirnov test, all pretest and posttest data on arm muscle strength were obtained at a significance value of $p > 0.05$, which means the data was normally distributed.

2. Homogeneity Test

The homogeneity test is intended to test the similarity of variances between the pretest and posttest. The homogeneity test in this study is the Levene Test. The results of the homogeneity test are presented in Table 4.

Table 4. Homogeneity Test

Group	<i>sig</i>	Information
<i>Pretest-Posttest</i>	0.656	Homogeneous

The statistical analysis of the homogeneity test has been carried out using the Levene Test. At the pretest-posttest, a significance value of $0.073 \geq 0.05$ was obtained. This means that the data group has a homogeneous variance. Thus, the population has the same variance or homogeneity.

b. Hypothesis Test Results

The research hypothesis testing was carried out based on the results of data analysis and interpretation of two-way ANAVA analysis. The results of the Hypothesis Test proposed in this study are presented in Table 5:

Table 5. ANOVA test

<i>Source</i>	<i>Type III Sum of Squares</i>	<i>F</i>	<i>Sig.</i>
Exercise_ Method	7,042	5,671	0.027
Muscle Endurance	51,042	41,107	0.000
Method_Exercise * Muscle Endurance	51,042	41,107	0.000

The interaction diagram between the triceps press down exercise and the seated rowing exercise with muscle endurance (high and low) in predicting arm muscle strength can be found in Figure 2:

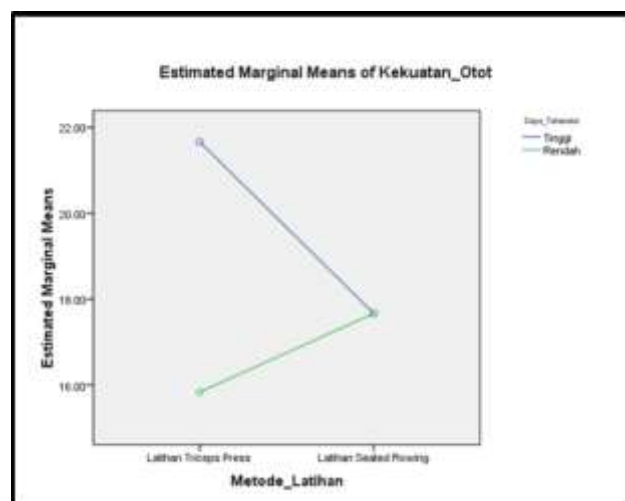


Figure 2. The Interaction Results between Triceps Press Down Exercise and Seated Rowing Exercise Muscle Endurance (High and Low) on Arm Muscle Strength

Based on the results of Tukey's test calculations on the asterisk (*), it is shown that the pairs that have significant interactions are: (1) A1B1-A2B1, (2) A1B1-A1B2, (3) A1B1-A2B2, (4) A2B1-A1B2, (5) A1B2-A2B2, while the other pairs without a significant interaction were: A2B1-A2B2.

4.2 Discussion

a. The Difference in the Effect of Triceps Press down and Seated Rowing Exercises on the Increase in Arm Muscle Strength

Based on hypothesis testing, it is known that there is a significant difference between the triceps press down exercise and the seated rowing exercise in increasing arm muscle strength in archery athletes. The triceps press down exercise group was higher than the seated rowing exercise in increasing arm muscle strength in archery athletes. The results of

this study are supported by research by (Sulaiman, 2017) that triceps press down exercise has a significant effect on triceps brachii endurance in archery athletes PERPANI, Pasuruan Regency ($t_{\text{count}} 64.709 > t_{\text{table}} = 2.228$). Posttest results of triceps brachii endurance after being treated with triceps press down training (mean = 27, 906) gave better results on the endurance of triceps brachii in the archery athletes of PERPANI, Pasuruan District than the pretest results of triceps brachii endurance before being treated with triceps press down training (mean = 20,982). They added that the results showed that there was a significant effect of standing barbell triceps extension on the strength of the arm and shoulder muscles in the volleyball game of the Putra Tri Wijaya Diesel Pekanbaru team. Resistance training is an exercise program that causes muscles to contract against external loads in the expectation of increasing endurance, strength and muscle mass.

For weight training applied for 4 weeks with 3 times a week carried out 3 sets of 20 repetitions with an intensity of 1 RM weeks I & II 40% and weeks III & IV 50% have an effect on arm muscle endurance in the treatment group, because the loading given had significant results than the standard archery training this means that the exercise had an effect on muscular endurance. Cakrawala & Agus (2019) stated that based on the results of the research from the t test calculation, it was found that $t_{\text{count}} (18) > t_{\text{table}} (2.16)$ for t table at a significant level $\alpha = 0.05$, the following conclusions can be drawn, there is a significant effect of barbell training curls and triceps pushdown against hypertrophy of the muscles of the upper arm in *Max Power Gym & Aerobic Kota Padang*.

Triceps press down is a weight training with arm muscle pull which begins standing upright facing the weight machine, then pulls the handle at chest level, the upper arms are pressed against the ribs, from this position straighten the two forearms, so that the handle touches the thigh, hold briefly, then return the handle at chest height without moving the upper arms and body (Baechle & Groves, 2003: 35). In this exercise the triceps muscle has an important role, which has the main function of driving the elbow joint for extension movements. The dominant tricep has type II fast twitch muscle fibers which have relatively good endurance. This exercise is included in the isotonus contraction, namely dynamic exercises performed on the principle of constant loads and changes in muscle length.

According to Bowers and Fox in Sukadiyanto & Muluk (2011: 100) "Strength training affects muscle hypertrophy, changes in biochemistry, changes in muscle composition, and changes in flexibility. Thus, the physiological response and impact of strength training is characterized by the adaptation process of muscle nervousness, muscle hypertrophy (enlargement), adaptation of cells, muscle endurance, cardiovascular adaptation, changes in biochemistry, changes in muscle composition, and changes in flexibility".

In resistance training, the greatest adaptation occurs in biochemical processes in the muscles. By utilizing mechano growth factors, these substances play a role in the process of increasing protein synthesis which is used in adapting muscle contraction to a given training load. In this case, in addition to the response from muscle fibers, it also causes an increase in the size of the capillaries, thereby increasing the use of oxygen in the muscle fibers. Enlargement of muscles (hypertrophy) is possible, but only slightly. This hypertrophy is caused by an increase in protein synthesis (actin and myosin) which stimulates amino acids which increase the number of mitochondria in muscle cells. In these myofibril cells will increase in size and number. In the metabolic system ATP and CP increase, the supply of myoglobin and the enzyme creatine phosphokinase is also increased. This increases the stress strength of the tendons, ligaments, and connective tissue in the muscle, in other words, the increased thickness of the connective tissue which contributes to the overall growth or hypertrophy of the muscles (Nasution, 2003).

Bafirman (2013: 79) explained that “Muscle hypertrophy can be increased through strength training and anaerobic exercises with high intensity and other short duration. Long-duration, low-intensity anaerobic exercises generally do not produce effective tissue hypertrophy, as athletes who focus on endurance only increase fat and carbohydrate storage in muscles, such as neovascularization. Basically, it needs an adequate supply of amino acids to produce muscle hypertrophy”

The existence of a given load increases contraction and stimulates motor neurons in the muscle, the contraction of these motor units simultaneously causes muscle contraction along the muscle which stimulates motor neuron activity. Weight training also affects neural adaptation associated with increased recruitment in the number of muscle groups. The more motor units that are recruited, the more active muscle fibers are. Many researchers agree that motor units are generally activated based on the existence of a definite recruitment order because of the definite and repetitive binding neuromuscular activity known as the orderly recruitment principle, namely the provision of stimuli that bind gradually to the motor unit to increase muscle capacity (Chu, 2006).

Meredth (2017: 1) stated that: “These triceps press exercise supports the user in a relatively fixed sitting position while the user extends his or her arms about the elbow from an exercise starting position to an exercise ending position (and often back to the exercise starting position)”. That is, this triceps press exercise supports the user in a relatively fixed sitting position while the user extends his arm hitting the elbow from the starting position to the end of the workout (and often returns to the starting position). So, the triceps press down exercise is a muscle exercise that has an important role, as the main function for moving the elbow joint for extension movements and this exercise is included in the isotonic contraction, namely dynamic exercises carried out with the principle of constant load and changes in muscle length.

b. The Difference in the Influence of Athletes Who Have High and Low Muscle Endurance on Arm Muscle Strength

The results of the analysis show that there is a significant difference between athletes who have high and low muscle endurance on the increase in arm muscle strength in archery athletes. Athletes who have high muscle endurance are higher than athletes who have low muscle endurance in increasing arm muscle strength in archery athletes. Irianto (2018: 75) stated that endurance is the ability to do work for a long time.

Arm muscle endurance in archery is an important element in archery. Physiologically, muscle strength is the ability of a muscle or muscle group to carry out one maximum contraction against the load. Muscle strength is also a measure of a muscle's ability to resist loads in one effort. Endurance strength (muscle endurance) is the ability of a muscle / group of muscles to overcome resistance / training load for a relatively long period of time. Arm muscle strength must also be trained to have resistance in locking the target so that when drawing the bow, the hand does not move too much. Endurance is also the ability to work muscles for a certain period of time.

Endurance is more important in archery. Muscle endurance refers to a group of muscles capable of performing consecutive contractions, one of which is the arm muscles. Arm muscle endurance is the ability of a muscle or muscle group to be able to contract dynamically or statically by holding a load for a relatively long time, to be able to maintain stability between the pulling and pushing force exerted by the arm muscles in order to create consistency of movement from the start the end of the game. The archer's use of arm muscle endurance is when drawing the bow, aiming (holding), and releasing the arrow.

Therefore, increasing the endurance of the arm muscles and the physical condition of the archer are considered very important to achieve optimal results.

The endurance function of the arm muscles in archery is very much needed considering the amount of pull and push that must be done continuously by the arm muscles. This element will later affect the shooting rhythm of the athlete because doing repetitive movements that require maximum muscle endurance. In addition, muscle endurance plays an important role because the archery competition requires a relatively long time. The time for the match can reach 4-5 hours or shoot 108 arrows in the qualifying round or in one day (Pratama, 2012). From this it can be seen that archery is a sport that requires high arm muscle endurance. The stronger the muscle endurance, the stronger the driving force to withstand the load so that it will produce a steady motion in pulling the bowstring for a relatively long time. The importance of arm muscle endurance and archery accuracy is, because archery is carried out for a long time, having good arm muscle endurance will help stabilize your archery which results in higher accuracy in archery and get perfect points.

c. The Interaction between Triceps Press Down and Seated Rowing Exercises with Muscle Endurance (High and Low) on Arm Muscle Strength

Based on the results of this study, there is a significant interaction between triceps press down and seated rowing exercises with muscle endurance (high and low) on arm muscle strength in archery athletes. The results showed that the triceps press down group was more appropriate for athletes with high muscle endurance, while the seated rowing exercise was suitable for athletes with low muscle endurance. From the results of the interaction, it appears that the main research factors in the form of two factors show a significant interaction. In the results of this study, the interaction means that each cell or group has a different effect on each group being paired. Couples who have interactions that are significantly different are as follows.

1. The group of athletes who were trained using triceps press exercise with high muscle endurance was better than the group of athletes who were trained using seated rowing exercise with high muscle endurance, with p value <0.05 .
2. The group of athletes who were trained using the triceps press exercise with high muscle endurance was better than the group of athletes who were trained using the triceps press exercise with low muscle endurance, with p value <0.05 .
3. The group of athletes who were trained using triceps press exercise with high muscle endurance was better than the group of athletes who were trained using seated rowing exercise with low muscle endurance, with p value <0.05 .
4. The group of athletes who were trained using the seated rowing exercise with high muscle endurance was better than the group of athletes who were trained using the triceps press exercise with low muscle endurance, with p value <0.05 .
5. The group of athletes who were trained using the triceps press exercise with low muscle endurance was better than the group of athletes who were trained using the seated rowing exercise with low muscle endurance, with p value <0.05 .

IV. Conclusion

Based on the results of the research and the results of the data analysis that has been done, the following conclusions are obtained. (1) There is a significant difference between the triceps press down exercise and the seated rowing exercise on the increase in arm muscle strength in archery athletes. The triceps press down group was better than the seated rowing exercise in increasing arm muscle strength in archery athletes. (2) There is a significant difference between athletes with high and low muscle endurance on the increase in arm muscle strength in archery athletes. Athletes who have high muscle endurance were higher than athletes who have low muscle endurance to increase arm muscle strength in archery athletes.

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