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Submission date: 08-May-2023 03:50PM (UTC+0700)
Submission ID: 2087377699
File name: article_andre.doc (372.5K)
Word count: 2050
Character count: 10698

HALAMAN OLAHRAGA NUSANTARA (HON)
Jurnal Ilmu Keolahragaan

Volume 6 No II
Tahun 2023

ISSN 2614-2775 (Print)
ISSN 2621-8143 (Online)

THE EFFECT OF PUSH-UP TRAINING ON TENNIS VOLLEY ABILITY

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Abstract
The purpose of this study was to determine the effect of push-up training on the ability to hit volley tennis. This research technique used a quasi-experimental method, meaning that before being given this design treatment a pretest was carried out first. The research design used was one group pretest-posttest design. The sampling technique is purposive sampling. The number of research samples was 20 people. Strength data is done by push-ups. Volleyball ability test using the Dyer Tennis Test which aims to measure volleyball ability. From the results of processing and evaluation of recording using the normality test, testing the hypothesis using the t test, that push-up exercises affect the ability to hit the volley. This can be seen from the results of statistical evaluation through the calculation of the t-test formula with the criteria tcount 7.65 > than t table 1.73, with a confidence level of 0.95 or 95% (α=0.05) and the number of samples (N = 20). This shows that there is a significant effect due to the push-up treatment on the volley.

Keywords: *Push-up; Volley; Tennis.*

Submitted : 04th of January 2023
Accepted : 06th of May 2023
Published : 08th of May 2023
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DOI http://dx.doi.org/10.31851/hon.v6i2.11571

INTRODUCTION

Tennis is one of the sports that is currently developing in West Sumatra. This can be seen from the increasing number of tennis clubs that have sprung up in regions, cities and regencies throughout West Sumatra. Along with the increasing number of tennis clubs in West Sumatra, championship activities are increasingly being carried out both at the regional and national levels, starting from early age championships, age groups, and national championships being held. To achieve an achievement is not easy. Sports achievements will be realized

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if there is cooperation between the government, the community, and elements that support sports development.

A person's achievement in playing is largely determined by his hitting ability, such as service, forehand groundstroke, backhand groundstroke and volley. Volley is one of the most important strokes in playing tennis, especially in turning off the ball so that it is difficult for the opponent to reach. Volleyball success is determined by several factors, such as: technique, grip, arm muscle strength, speed, strength, coordination, balance and the start of motion in volley strokes. Arm muscle strength is one of the determining factors in the success of hitting a volley. With strong arm muscles, volley shots can be done to the fullest (Irawadi, 2009).

(King, 1991) explains "The volley shot is one of the most efficient strokes in tennis and must be seen as a major attack weapon to continue the attack on the opponent." Judging from the movement process, the volley technique is that the ball is hit before the ball hits the ground or court, where when doing so the player must move forward to approach the net and cut off the ball's path.

The physical conditions involved in volley shots include strength, speed, agility and coordination. All the muscles involved in volleying must be properly formed in order to get maximum results in volleying. The role of arm muscle strength in the game of tennis is very much needed, especially when doing volley shots. By increasing the strength of the arm muscles, the energy used in carrying out a movement becomes faster and stronger (Arsil, 1999).

Need to be given exercises that support the elements of strength that affect the results of the volley shot above. Many exercises lead to arm muscle strength, including push-up exercises. Push-ups are a form of exercise that many athletes do to increase arm muscle strength, especially in tennis in volleyball (Syafruddin, 1999). In the sport of tennis, arm muscle strength is needed to perform groundstrokes, volleys and serves.

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The reality on the field today, both in practice and in matches, is that there are still many players who are unable to play volley. This can be seen from his movements when he is about to volley, so he always makes mistakes such as: the ball comes out high, hits the net, so that the opponent gets a lot of points. If this happens frequently, then the ultimate goal of every attack and battle, which is to win, will not be achieved.

METHOD

Based on the problems to be discussed, this research is quasi-experimental in nature. According to (Sugiyono, 2007) "Quasi-experimental research is research approaching real treatment where it is impossible to control, manipulate all relevant variables. the sampling technique is purposive sampling. Purposive sampling is sampling based on research objectives or according to research needs. The number of research samples was 20 people.

The treatment was carried out for approximately 6 weeks with a frequency of exercise three times a week. Before starting the training, data was first collected about the athlete's initial ability, namely about the ability of the volley technique in court tennis games, then data was taken again about the final ability after doing push-up exercises for 6 weeks. Strength data is done by push-ups, with the results recorded is the amount by using a stopwatch, 30 seconds long. Volley ability test using the Dyer Tennis Test which aims to measure volley ability. The value recorded is the number of volleys taken in 30 seconds.

RESULT AND DISCUSSION

The data in this study is in the form of volley ability data. Volley ability data was taken before and after treatment. The data collected before the treatment is called the initial test data, and the data collected after the treatment is called the posttest data.

Frequency Distribution

The following describes the frequency distribution of pre-test and post-test data.

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Table 1. Pre-test data

Score	Fa	fr
15-20	1	5
21-24	4	20
25-30	9	45
31-34	3	15
35-40	3	15
Total	20	100

Information:

fa = absolute frequency
fr = relative frequency

In the pre-test data table, it can be seen that of the 20 samples, 1 person (5%) has a score of 15-20, 4 people (20%) has a score of 21-24, 9 people (45%) has a score of 25-30, 3 people (15%) have a score of 31-34 and 3 people (15%) have a score of 35-40.

Table 2. Post-test data

Score	Fa	fr
15-20	1	5
21-24	0	0
25-30	10	50
31-34	6	30
35-40	3	15
Total	20	100

Information:

fa = absolute frequency
fr = relative frequency

In the post-test data table, it can be seen that of the 20 samples, 1 person (5%) has a score of 15-20, no sample has a score of 21-24, 10 people (50%) have a score of 25-30, 6 people (30 %) had a score of 31-34 and 3 people (15%) had a score of 35-40.

Analysis Requirements Testing

Normality Test

After obtaining pre-test and post-test data, before the hypothesis test is carried out, a normality test is carried out first, to ensure the normality of data distribution. The normality test used is the lilliefors normality test.

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Table 3. Normality test results of pre-test data and sample t-test posts

No	Data	The	Lt 0,05	Information
1	*Pre-test*	0,1868	0.190	Normal
2	*Post-test*	0.1082	0.190	Normal

From the data above, it was obtained that all data obtained were spread normally. This indicates that the data can be continued with hypothesis testing.

Homogynity Test

In Muhidin and Maman (2007) homogynity testing is a test of whether or not there are two or more variances, where this test is used to compare two independent variables. Because this study only used one variable which was a volley, homogynity testing did not need to be done. All data have been presented in the normality test (t-test)

Hypothesis Testing

From the results of the analysis carried out by means of the t test, it is determined that tcount is 7.65 > than ttable 1.73, this means that Ho is rejected. Thus the push-up exercise has a significant effect on increasing the volley shot. The results of this test are described in the following table:

Table 4. T-test Result

No	dB	tcount	t_{table}	Information
1	20-1= 19	7.65	1.73	Significant

From the table above it can be seen that the value of tcount is greater than ttable. This shows that there is a significant effect due to the push-up treatment on the volley.

Discussion

Based on the results of the analysis obtained from this study, it has been shown that there is an increase in volleys from the initial test before being given practice and the final test after being given push-up exercises, there is an effect of push-up practice on increasing volley shots. This means that the push-up exercises given can actually improve the volley shot.

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From the findings, it was found that push-up training and volley ability showed a positive relationship, in the sense that volleyball ability can be determined by push-up training. Therefore, a person's push-up training must be trained continuously because push-ups are a must have in mastering a technique (volley).

Strength is the ability of a muscle to work to withstand maximum loads, (Arsil, 1999). In tennis, muscle strength is a very important factor. These muscles include the shoulders, arms and legs. Shoulder muscles and arm muscles play a role in hitting while leg muscles play a role in agility which is useful in finding a hitting position.

Apart from the results obtained in this study, it turns out that factors related to the training process also greatly influence the results achieved, such as intensity, duration, intervals, frequency, and volume of the exercise itself. Because each of these factors contributes to the continuity of the programmed training process. Considering that the push-up training program is very important in carrying out training activities, attention should be paid to the realization in the field.

In addition, the coach plays an important role, because the background of the knowledge gained through push-up training is needed in achieving the desired goal, namely an increase in volley ability for athletes in supporting later achievements.

On the other hand, of course athletes have an important role in this study with the presence and activity of the athletes themselves. Being active means that the athletes who are the sample of the researcher train continuously without causing a feeling of boredom and fatigue, as for obstacles during training such as rain or other activities, the training day which we usually run three times a week will be replaced with another day so that push- ups continue to be given according

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to the existing program in addition to routine exercises carried out on the tennis court.

CONCLUSION

Based on the analysis and discussion of this research, it can be concluded that there is a significant effect of push-up training on increasing the ability to hit the volley.

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