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The Influence of Squat Jump and Knee Tuck Jump Exercises on Leg Muscle Explosive Power in Male Volleyball Extracurricular Students at SMA Negeri 3 Pati

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Abstract
This study aims to determine the effect of squat jump and knee tuck jump exercises on leg muscle explosive power in male volleyball extracurricular students at SMA Negeri 3 Pati. The research employed a quantitative method with a pre-test and post-test experimental design. The sample consisted of 14 male students selected using total sampling technique. The subjects were divided into two groups: the experimental group I received squat jump training, while the experimental group II received knee tuck jump training. Each group underwent 14 training sessions. The instrument used to measure leg muscle explosive power was the vertical jump test. Prior to data analysis, normality and homogeneity tests were conducted, followed by hypothesis testing using the paired sample t-test with a significance level of $\alpha = 0.05$. The results showed that the average pre-test and post-test scores in experimental group I were 236.57 and 286.00, respectively, while in experimental group II they were 244.71 and 289.14, respectively. The t-test results indicated that the calculated t-value of 0.733 was lower than the t-table value of 2.179 with a significance value (p) of 0.478 ($p > 0.05$), thus the null hypothesis (H_0) was accepted. Therefore, it can be concluded that there is no significant difference in the improvement of vertical jump performance between students who underwent squat jump training and those who underwent knee tuck jump training.

Keywords: squat jump; knee tuck jump; leg explosive power; vertical jump; vollyball

1. Introduction

Sports are a part of human activity that is beneficial for developing a healthy body and mind. In general, the definition of sports is one of a person's physical or mental activities that is useful for maintaining and improving the quality of a person's health. Sports have now become widespread and a basic necessity in people's lives, making it very easy to do anywhere and anytime. Sports come in various forms, categorized into different sports disciplines. One of the most well-known and popular sports among all segments of society is volleyball.

Volleyball has many benefits. Volleyball is one of the sports frequently competed at both national and international levels (Raihanati, 2021). In volleyball, mastering basic techniques as well as possible is essential, so it is very important for every volleyball player to be able to master the basic techniques of volleyball well. A lack of mastery of basic techniques leads to more significant technical errors. (Raihanati, 2021).

Volleyball can also instill a spirit of sportsmanship, teamwork, cooperation, and self-confidence to improve performance. Volleyball is a team or group sport played with a large ball, consisting of 6 players on a court measuring 18 meters long and 9 meters wide. The net posts are 2.24 meters high for women and 2.45 meters for men (Ratno, 2019). The rules used are the official rules of PBVSI (All Indonesian Volleyball Association) and under the auspices of FIVB (Federation Internationale Volley Ball). In volleyball, there are two types of position placement: three players in front of the net are front-row players and consist of positions 4 (left-front), 3 (middle-front), and 2 (right-front). The other three players are back-row players consisting of positions 5 (left-back), 6 (middle-back), and 1 (right-back) (PBVSI, 2021). The initial purpose of volleyball was to fill leisure time or serve as a diversion after a tiring day of work (Fitriansyah, 2019). Subsequently, it only developed toward other goals such as achieving high performance in improving self-achievement, and bringing honor to the region, nation, and country. Beside that, playing volleyball is also for maintaining and improving physical fitness/health.

Volleyball is a sport that can be taught thru physical education in schools. Physical education is based on the development of students' attitudes, knowledge, and skills. In addition, physical education is based on the principles of physical and motor growth and development (Setiawan, 2021). Physical education also needs support, one of which is extracurricular activities. Extracurricular activities are activities carried out outside of school hours, and they can also be used as a platform to develop volleyball in the school environment (Mahfud, 2020). Similarly, at SMA Negeri 3 Pati, volleyball extracurricular activities are used as a platform to develop students' potential in the field of volleyball. Furthermore, to achieve satisfactory performance results in volleyball, students must thoroughly master the basic techniques. Here is Table 1 listing the achievements of the SMA Negeri 3 Pati boys' volleyball team from 2023 to 2024:

Table 1. List of achievements of the SMA Negeri 3 Pati volleyball team

Number	Type of Activity	Year	Champion
1.	Pati Regency POPDA	2023	III
2.	Pati Regency U-17 Exhibition Match	2023	II
3.	Pati Regency POPDA	2024	II

Source: Interview

The basic volleyball techniques that every player must master are the fundamental techniques in volleyball, including: serving, passing, setting, spiking, and blocking (Wulandari, 2021). Serving is the stroke of the ball performed from the back of the playing court and directed over the net to the opponent's area as the start of a volleyball game. Passing is a player's attempt to pass the ball to a teammate on their own court using specific techniques, which is fundamental in volleyball. The smash is the most common attack technique used by teams to score points. Meanwhile, the block or dam serves as the primary defense to stop attacks from the opponent. (Setiawan, 2021).

Volleyball requires a great deal of strength, including arm and leg muscles, as well as muscular endurance involving the abdominal, arm, and shoulder muscles. Additionally, speed, flexibility, and leg and arm muscle strength are necessary. Cardiovascular endurance, including the heart and lungs, as well as good movement coordination, are also very important in this game (Adhi, 2017). Beside the basic techniques that players must master in volleyball, there are several physical fitness

components needed in the game, namely strength, flexibility, agility, endurance, and power (explosive strength) (Isabella, 2021).

Strength is the ability of a muscle or group of muscles to withstand or receive a workload. Muscle strength is the maximum contraction produced by a muscle or group of muscles. Physiologically, muscle strength is the ability of a muscle or group of muscles to perform a single maximum contraction against a load or resistance. Mechanically, strength is defined as the maximum force produced by a muscle or group of muscles (Adhi, 2017). Explosive power is the ability of a muscle to use maximum force in a very short amount of time. Leg muscle power refers to the ability of a group of muscles in the legs to perform explosive movements, such as when jumping (Arianto, 2020). There are several techniques for training muscle power, including Squat Jump exercises and Knee Tuck Jump exercises.

Radcliffe & Farentinos (1985), as cited in Ratno (2018), state that Squat Jumps and Knee Tuck Jumps are types of plyometric exercises. Simply put, plyometric exercises are sports that involve jumping or active movements. This exercise can be done independently or combined with other movements (Ropianti, 2021). The squat jump exercise is a form of exercise where both hands are placed behind the head, and then the body jumps from a squatting position to a standing position. Here's how: squat until you're in a squat position, push off your toes, and jump as high as you can. Upon landing, immediately bend your knees, return to a squat position, and perform another jump. Squat jumps are effective for increasing muscle strength, explosiveness, balance, flexibility, and cardiovascular fitness (Santos, 2015). Knee tuck jumps, on the other hand, emphasize jumping as high as possible with legs together, bending the knees to touch the hands in front of the chest. This exercise is expected to increase muscle strength and power, which in turn will improve the explosive power of the limbs (Arwih, 2022).

Physical components are a player's need to achieve their maximum performance. As volleyball is a sport that heavily relies on physical fitness, a player's physical condition is crucial for supporting game activity, especially during matches. Good physical condition also influences the mastery of techniques in volleyball. For example, in the smash technique, which is the main attack in volleyball to defeat the opponent and score points for the team, a high jump and a strong, directed hit are required (Gustiawan, 2016). Therefore, leg muscle power and good movement technique mastery are required. The physical component of leg muscle explosive power is very helpful for players when performing smashes or blocks. According to Agus (2012), striving for good leg muscle explosive power not only emphasizes load (strength) but also the speed demonstrated in every activity such as jumping, hitting, throwing, and explosive movements. Therefore, it is very important for players to train the physical component of leg muscle explosive power. Here is Table 2 showing the results of the initial vertical jump test observation:

Table 2. Initial observation results for the vertical jump test

Number	Sampel	High Reach	High Jump	Difference	Category
1.	S 1	204	228	24	Average
2.	S 2	249	275	26	Average
3.	S 3	230	248	18	Poor
4.	S 4	245	264	19	Poor
5.	S 5	255	276	21	Poor

6.	S 6	250	271	21	Poor
7.	S 7	235	252	17	Poor
8.	S 8	252	270	18	Poor
9.	S 9	248	269	21	Poor
10.	S 10	257	275	18	Poor
11.	S 11	247	268	21	Poor
12.	S 12	268	290	22	Average
13.	S 13	260	288	28	Average
14.	S 14	264	298	34	Below Average

Source: Observation

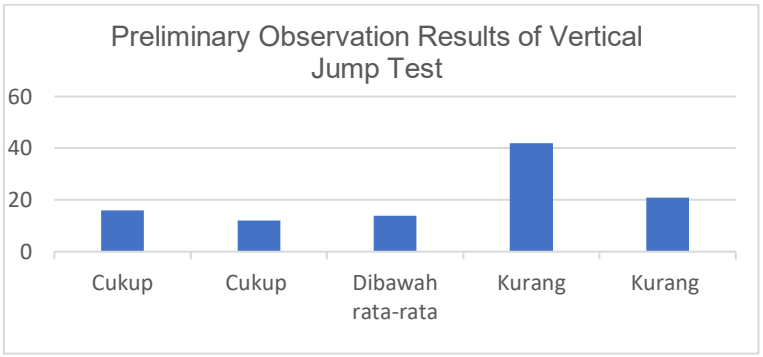

Figure 1. Bar graph of initial observation results for the vertical jump test

Based on initial observation results of male volleyball extracurricular students at SMA Negeri 3 Pati, their vertical jump performance is still in the less-than-good category. Their jumps are still insufficient, causing some students to not perform at their maximum potential during the jump. Therefore, the author believes that effective and efficient training is needed to increase jump height by providing squat jump and knee tuck jump exercises to male volleyball extracurricular students at SMA Negeri 3 Pati. By providing correct and maximum squat jump and knee tuck jump exercises, maximum leg muscle explosive power will be achieved. Maximum leg muscle explosive power can also result in maximum jumps when performing smash and block techniques.

2. Method

This research uses a quantitative experimental research method. Experimental quantitative methods are research methods used to investigate the effect of a specific treatment on another under controlled conditions (Sugiyono, 2013). Experimental design refers to the steps that need to be taken long before the experiment is conducted to ensure that the necessary data is obtained, leading to objective analysis and conclusions applicable to the issue being discussed by Sugiyono. The research conducted by Ahmad Aris Aofi Fhozi (2018) aimed to determine the effect of squat jumps, knee tuck jumps, and depth jumps on improving leg muscle explosive power in volleyball athletes at the Talenta Semarang Club. Using a pre-test and post-test experimental design, this study involved volleyball athletes as a sample who were given plyometric training for several sessions. The research results indicate that all three types of exercise significantly improved lower limb explosive power, with the squat jump exercise having the greatest impact compared to the others. This research offers an in-depth understanding of the comparative effectiveness of several plyometric training methods tailored to the needs of lower limb muscle strength development in

volleyball athletes. These findings can serve as an important foundation for developing more specific and targeted training programs to improve physical performance in volleyball, particularly for athletes at the high school level.

The experimental design used in this study is a two-group pre-test post-test design with 16 treatments. The research population for this study is the 14 male volleyball extracurricular students at SMA Negeri 3 Pati. The sample for this study uses total sampling, which is a sampling technique where the sample size is equal to the population. The research location is at State Senior High School 3 Pati. This study uses squat jumps and knee tuck jumps as independent variables, while the dependent variable is leg muscle explosive power. Here is Table 3 about experimental design:

Table 3. Research experimental design

Group	Pre Test	Treatment	Post Test
Experiment	01	X	02

Description:
01: Pre Test
X: Training Treatment
02: Post Test

The research was divided into 2 groups to receive treatment using the ordinal pairing method. Group A was given squat jump training, while Group B underwent knee tuck jump training. After that, the final test was conducted after all samples completed the experimental exercise, receiving treatment three times a week for 5 weeks (14 sessions). Next, an initial test was conducted on the 14 samples to measure their initial leg power. After the initial test results were obtained, the samples were ranked based on the order of the results, from highest to lowest. Then, the samples were divided into two groups using the matching pairing technique. Each group consists of 7 people. Group A was given squat jump exercises according to the training program, while Group B performed knee tuck jumps. There are a total of 14 training sessions, 3 times a week for approximately 5 weeks. After completing all 14 sessions, the samples were given a 1-2 day rest, followed by a final test (post-test) to measure limb power. After pre-test and post-test results are obtained, statistical calculations are performed to determine whether the proposed hypothesis is accepted or rejected (Ratno & Muda, 2018). Then the test results will be recorded and calculated using the SPSS 20.0 computer program.

Data prerequisite tests include several stages: (a) Normality tests are conducted to ensure that the data is symmetrically or normally distributed. Normality testing uses the Kolmogorov-Smirnov method (Maksum, 2012: 161). Data distribution is considered normal if the significance level of the statistical test is greater than 0.05. (b) The homogeneity test aims to ensure that the variance of each group is the same, so that comparisons can be made fairly (Nuryadi et al., 2017). In this study, Levene's test was used. If the Levene's test value is greater than 0.05, then the data has homogeneous variance. (c) Test the hypothesis, in accordance with the hypothesis and research type, using a paired sample t-test to determine the effect of squat jump and knee tuck jump exercises on the leg muscle explosive power of volleyball players. The hypothesis rejection level is set at $\alpha = 0.05$. For hypotheses one thru four, which compare two samples, the t-test was used (Nuryadi et al., 2017).

3. Result

This research was conducted using an experimental method, with variations in Squat Jump and Knee Tuck Jump exercises performed on male volleyball extracurricular students at SMA Negeri 3 Pati. Then the test results will be recorded and calculated based on the group and type of training method applied. Here, the results of both groups (the squat jump group and the knee tuck jump group) will be analyzed.

Pre-test data was obtained from experimental group I and experimental group II before performing leg muscle explosive power exercises as follows:

Table 4. Statistical description results of pre-test squat jump and knee tuck jump data

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
PRE TEST	7	220	250	236.57	11.802
PRE TEST	7	235	251	244.71	6.047
Valid N (listwise)	7				

Source: Processed data from SPSS 24

From the table, it can be seen that students in experimental group I who received Squat Jump training achieved an average almost identical to that of experimental group II who received Knee Tuck Jump training.

Table 5. Results of normality test for pre-test squat jump and knee tuck jump data

Tests of Normality						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
SQUAT JUMP	.329	7	.022	.814	7	.057
KNEE TUCK JUMP	.238	7	.200	.910	7	.394

Lilliefors Significance Correction
Source: Processed data from SPSS 24

From the table above, it can be seen that the data distribution of pre-test experiments I and II before being given Squat Jump and Kne Tuck Jump variation exercises is normally distributed. Considering the sig (2-tailed) for the first experiment is 0.057 > 0.05 and for the second experiment is 0.394 > 0.05, based on Table 5 (Ho is accepted). for the experiment Table 6 Results of Homogeneity Test for Pre-test Squat Jump and Knee Tuck Jump Data

Table 6. Test of homogeneity of variance

		Levene Statistic	df1	df2	Sig.
PRETEST	Based on Mean	3.382	1	12	.091
	Based on Median	.790	1	12	.391

	Based on Median and with adjusted df	.790	1	7.382.402	
	Based on trimmed mean	3.163	1	12	.101

Source: Processed data from SPSS 24

Based on the table, it can be seen that the sig value Based on Mean is 0.091 > 0.05, therefore (Ho is accepted and Ha is rejected). Therefore, it can be concluded that the variance of the pre-test data for experiment I and experiment II before the Squat Jump and Knee Tuck Jump variations were homogeneous. Post-test Data Analysis Post-test data were obtained from experimental group I and experimental group II after performing Squat Jump and Knee Tuck Jump exercise variations, as follows:

Table 7. Post-test data description results for squat jump and knee tuck jump

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
POST-TEST	7	272	295	286.00	10.000
POST-TEST	7	280	297	289.14	5.367
Valid N (listwise)	7				

Source: Processed data results 24

The results of the table above show that experimental group I, which performed squat jumps, performed worse than experimental group II, which performed knee tuck jumps.

Table 8. Results of normality test for post-test data of squat jump and knee tuck jump

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
POSTTEST	.254	7	.191*	.807	7	.048
POSTTEST	.202	7	.200*	.974	7	.926

*. This is a lower bound of the true significance.

Based on the table above, experimental group I has a sig (2-tailed) value of 0.048 > 0.5, while experimental group II has a sig (2-tailed) value of 0.926 > 0.5, therefore (Ho is accepted). Therefore, it can be concluded that the distribution of post-test data for experiment I and experiment II before the treatment of exercise variation was normally distributed.

Table 9. Results of homogeneity test for post-test data of vertical jump, squat jump, and knee tuck jump

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
POSTTEST	Based on Mean	3.250	1	12	.097
	Based on Median	1.370	1	12	.264
	Based on Median and with adjusted df	1.370	1	8.685	.273
	Based on trimmed mean	2.876	1	12	.116

Lilliefors Significance Correction

Based on the table above, it can be seen that the sig value based on the mean is 0.097 > 0.05, therefore (Ha is rejected and H0 is accepted). Therefore, it can be concluded that the post-test data variance of experimental group I and experimental group II after the training variance was administered is homogeneous.

Hypothesis Testing Hypothesis testing was conducted to determine the effect of squat jump and knee tuck jump exercises on lower limb muscle explosive power in male volleyball extracurricular students at SMA Negeri 3 Pati. The research hypothesis in this study was analyzed using a paired samples t-test with the assistance of SPSS 24.

Table 10. Results of the two-sample mean difference test for experiment I: pre-test data and experiment I post-test data (hypothesis 1 test)

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	PRE TEST – POST TEST	-49.429	14.455	5.464	-62.797	-36.060	-9.047	6	.000

Source: Data processing results 24

The table above shows that the calculated t-value is negative. According to SPSS Indonesia (2024), a negative calculated t-value is not an error, but rather because the average results of Experiment I pre-test data and Experiment I post-test data show a calculated t-value of 9.047 > t-table (df 6) 2.447 and a significance level of p = 0.000. Since the significance level of 0.000 < 0.05, this result indicates a significant difference. Thus, the alternative hypothesis (Ha) stating "There is a significant effect of squat jump training on leg muscle explosive power in male volleyball extracurricular students at SMA Negeri 3 Pati" is accepted.

Table 11. Results of the two-sample mean difference test for experiment II pre-test data and experiment II post-test data (Hypothesis Test 2)

Paired Samples Test

		Paired Differences					T	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	PRE TEST - POST TEST	-44.429	3.994	1.510	-48.122	-40.735	-29.431	6	.000

Source: Data processing results 24

The table above shows the results of the two-sample t-test for the experimental data. The pre-test data for Experiment II and the post-test data for Experiment II show a calculated t-value of 29.431, which is greater than the critical t-value (df 6) of 2.447, and a significance level of 0.000,

which is less than 0.05. Therefore, these results indicate a significant difference. Thus, the alternative hypothesis (Ha) which states "There is a significant effect of knee tuck jump training on leg muscle explosive power in male volleyball extracurricular students at SMA Negeri 3 Pati" is accepted.

Table 12. Results of the post-test vertical jump two-mean difference test data for experiment I and experiment II

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
POST-TEST	Equal variances assumed	3.250	.097	-.733	12	.478	-3.143	4.290	-12.489	6.204
	Equal variances not assumed			-.733	9.192	.482	-3.143	4.290	-12.816	6.530

Source: Data processing results 24

Based on the table, the calculation results show a t-statistic value of 0.733 and a t-table value (df 12) of 2.179, with a significance level of p = 0.478. Since the t-statistic value of 0.733 is less than the t-table value (df 12) of 2.179 and the significance level p is greater than 0.05, the null hypothesis (Ho) is accepted. It can be concluded that there is no significant difference in the average vertical jump of male volleyball extracurricular students at SMA Negeri 3 Pati between experimental group I and experimental group II after being given variations of squat jump and knee tuck jump exercises.

4. Discussion

The influence of squat jump exercise on leg muscle explosive power

In this study, 16 meetings were held, with the first and last 2 meetings being used for the beginning and end, respectively. Treatment was performed for a total of 14 sessions. The technical treatment involves performing squat jump exercises with several repetitions per set, with a 2-minute rest period, and the repetitions and sets increasing each week. In each set of the first week, with 8 repetitions for 2 sets, students performed the squat jump movement together under the guidance of the researcher. The results of the hypothesis test show that the calculated t-value is greater than the critical t-value, indicating a difference in results between the pre-test and post-test in experimental group I. This is due to the administration of treatment for 14 meetings, which resulted in an increase in the average vertical jump ability of the students. The repetition training

method involves using a fixed number of repetitions for certain exercises, but the dosage increases over time. For example, in fixed repetition training, the set remains constant, the exercise dose starts with 8 repetitions for 2 sets and so on, and the number of sets always increases each week. Thus, the exercise dosage for this method involves increasing the number of sets while keeping the repetitions the same (Pratama, 2019).

The influence of knee tuck jump exercise on leg muscle explosive power

Based on the pre-test scores in this experimental class II, it is known that the highest pre-test score is 251 cm and the lowest is 235 cm. Next, the knee tuck jump exercise treatment was administered. In this study, there were 16 meetings in total, divided into 2 initial and final meetings for testing. Treatment was performed for a total of 14 sessions. The treatment technique is almost the same as that given to experimental group I. However, for this exercise, students are required to jump until their knees touch their chest or abdomen. Each student performs the movements according to the same repetitions and sets as the squat jump exercise. The results of the hypothesis test show that the calculated t-value is greater than the table t-value, so it can be concluded that there is a difference in pre-test and post-test results in experiment II. Therefore, it can be explained that "There is an effect of knee tuck jump exercise on leg muscle explosive power in male volleyball extracurricular students at SMA Negeri 3 Pati". The results of this study are also supported by Bompa's (1994: 51) opinion, which states that regular training for 6-8 weeks will result in significant bodily adaptation to the training program undertaken.

Squat jump and knee tuck jump exercises show no significant change in leg muscle explosive power

In this study, it was found that the average pre-test score for experiment I was 236.57 and the post-test score for experiment I was 286.00. A t-test was conducted and a t-statistic of 9.047 was found with a sig value of 0.000. In the experimental group II, the pre-test and post-test mean values were 244.71 and 289.14. A t-test was conducted and a t-statistic of 29.431 was found with a sig value of 0.000. The significance level of the error used is 5% and the sample size used is 14. Using these values, the t-table (df 12) is 2.179. Based on the calculation results, the calculated t-value is 0.733 and the t-table (df 12) is 2.179 with a significance level of p = 0.478. Since the calculated t-value of 0.733 is greater than the t-table (df 12) value of 2.179 and the significance level of 0.478 is greater than 0.05, Ho is accepted. It can be concluded that there is no significant difference in the average vertical jump of male volleyball extracurricular students at SMA Negeri 3 Pati between experimental group I and experimental group II after being given squat jump and knee tuck jump exercises. The research results show that the pre-test and post-test scores for experiment I, which are 236.57 and 286.00 respectively, are lower than the pre-test and post-test scores for experiment II, which are 244.71 and 289.14 respectively. Both the post-test for Experiment I and Experiment II had an impact on lower limb explosive power. The increase in Experiment I and Experiment II is not significantly different, so there is no significant difference.

Therefore, it can be concluded that both squat jumps and knee tuck jumps showed improvement after the treatment, but the difference between them was not significant. Squat jump exercises can yield good results for leg muscle power in the vertical jump test. Squat jump exercises are designed to improve the vertical explosive power of leg muscles. The movement in this exercise requires the sample to perform with both hands clasped behind the head (or in front of the body), followed by repeated jumping, squatting, and standing movements according to the predetermined repetitions. This is evidenced by research conducted by Setiawan (2021), which shows that squat

jump exercises have a significant impact on improving lower limb muscle power. This training program aligns with the opinion of Saputra (2020), who stated that the training process must be regular, meaning the training must be consistent, continuous, and progressive. Training is given from simple to complex, resulting in specific outcomes where the body's physical condition will adapt to the training program. The knee tuck jump exercise is a jumping movement where the knees are bent and the feet push off the ground to jump and land with a bounce. The plyometric knee tuck jump exercise will affect the gluteus, gastrocnemius, quadriceps, hamstrings, and hip flexor muscles. This exercise will also develop the speed and muscular strength components, which are the foundation for muscular explosive power. Some forms of exercise to develop power include performing plyometric exercises. This is an exercise performed by stretching (lengthening) specific muscles before explosively contracting (shortening) them. If you want to increase power in a specific muscle group, you must stretch that muscle group and then explosively shorten it immediately. Plyometric training programs are typically more effective than squats or squat jumps in developing lower limb muscle explosiveness. Leg muscle power can be influenced by strength, speed, muscle contraction, the number of white muscle fibers, age, body type, and gender.

5. Conclusion and Recommendation

Based on the results of data analysis, description, research results testing, and discussion, it can be concluded that: 1. There is an effect of Squat Jump exercise on leg muscle explosive power in male volleyball extracurricular students at SMA Negeri 3 Pati. This is evidenced by the difference in the average pre-test value of experiment I being lower than the average post-test value of experiment I, which are 236.57 and 286.00, respectively. 2. There is an effect of Knee Tuck Jump exercise on leg muscle explosive power in male volleyball extracurricular students at SMA Negeri 3 Pati. This is evidenced by the difference in the average pre-test value of experiment II being lower than the average post-test value of experiment II, which are 244.71 and 289.14, respectively. 3. There is no significant difference between experiment group I and experiment group II regarding leg muscle explosive power in male volleyball extracurricular students at SMA Negeri 3 Pati after being given Squat Jump and Knee Tuck Jump exercises. With a t-value of 0.733 > t-table (df 12) of 2.179 and a significance value of 0.478 > 0.05. This shows that both methods are equally effective.
Suggestions Based on the conclusions reached, the researcher offers some important suggestions, including: 1. Coaches should provide more varied and gradual training to improve lower limb muscle explosiveness. 2. Coaches should choose exercises that are suitable for students to make them easy to perform and more effective, and to avoid injuries. 3. Other researchers can conduct studies with different variables to find better training methods for students.

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