



INFLUENCE EXERCISE UP AND DOWN SEAT AND SKIPPING TO TALL LEAP ON PBV HIZBUL WATHAN VOLLEYBALL ATHLETE

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ABSTRACT

This study aims to determine the effect of bench stepping and skipping exercises on the vertical jump ability of volleyball athletes at the PBV Hizbul Wathan club. The method used is an experimental approach with a one-group pretest-posttest design. The research subjects consisted of 15 athletes aged 18–19 years who actively participated in training. The instruments used included the vertical jump test to measure athletes' jumping height before and after the treatment. The exercise program consisted of 16 sessions over 6 weeks, performed three times per week. Data collection involved pretest and posttest measurements, and the results were analyzed using paired sample t-tests. The findings showed a significant increase in vertical jump height after athletes underwent the bench stepping and skipping exercise regimen. The average pretest score was 226.07 cm, while the posttest average was 256.60 cm, with a significant value of 0.000, indicating a substantial difference. The analysis confirmed that the exercises positively impacted explosive leg power, which is crucial for volleyball performance in actions such as smashing, blocking, and jump serving. The study concludes that bench stepping and skipping exercises effectively enhance the vertical jump capability of volleyball athletes, providing practical benefits for physical training programs focused on improving lower body power.



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INTRODUCTION

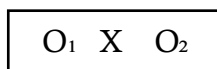
Volleyball in Indonesia can be said to be a sport that has been popular, so the government is trying to develop sports activities as an effort to develop physical and spiritual skills, the government is trying to popularize this sport and make the community sporty. Volleyball itself is a fun game if you have mastered the basic techniques in the game of volleyball itself, volleyball techniques include: Service, Passing, Smash and Block, all of these techniques must be mastered by all volleyball athletes themselves, mastery of game techniques will determine the cohesiveness and victory of a team. To be able to master all the basic techniques, you must first prepare your physical or body in good condition, and you must also have a strong mentality so that all these techniques can be mastered. This volleyball sport will definitely not be separated from your life, every day there must be many people who do it. In addition to being able to make your body healthy, this sport can also be used as a means of playing. Sometimes you can think of sports as just a means of playing. But you need to know, sports can also be an achievement in our lives if trained and fostered. Every sport that is played must have different techniques and rules. If you understand the techniques and rules, it is your initial capital to become a professional player (Yoga, 2008). Sports also have a positive impact for those who really pursue their favorite sports. In a sport that is widely in demand by people in the world, from students to the general public, namely volleyball, there are many volleyball athletes all over the world, especially in Indonesia itself, there are many competitions held from the Village, Regency, Province and National levels.

Volleyball is a game played by two teams, each team consisting of six players. Each player chooses a special skill, namely as a hitter, feeder, and libero. The volleyball game itself is played using one ball that is bounced from one player to another by passing which ends with a smash on the opposing team, and the two teams are separated by a net in the middle of the field at a certain height (Toho. Muhyi et al., 2008: 1). The early history of the development of the game and sport of volleyball comes from the discovery of a physical education instructor in the United States. The first volleyball game was discovered by William G Morgan in 1895, at that time the game was called Mintonette, precisely in Holyoke Massachusetts, United States (Toho. Muhyi et al., 2012: 5). Meanwhile, according to (Ahmadi, 2007: 2) the game of volleyball has been known since the Middle Ages, especially in European countries, Italy, Germany. This game was introduced under the name "Fautsball" in 1893. And two years later, in 1895, William G Morgan, a physical education teacher tried a similar game. Based on the way to play volleyball called Mintonette at that time was then changed to volleyball, volleyball is a combination of four games, namely basketball, baseball, tennis, and handball. From this combination was born a game that is quite interesting to play both indoors and outdoors (open air). Volleyball itself does not require a very wide field, uses a ball and net, in essence it is not too expensive and can be played in large numbers.

Volleyball is a game that is very popular among the public because it is easy to play and does not require a large space, so there are many volleyball courts in several areas in Indonesia. Although volleyball is easy to play, it also requires adequate basic playing skills. Some of these basic skills include passing which includes good underhand and underhand passing, smashing with various variations, blocking the ball individually or in pairs, and serving which includes underhand, overhand, and jump serving. These basic techniques must be mastered by beginner players, with the guidance of a coach or physical education teacher, these basic techniques will be mastered as well as possible (Toho, Muhyi et al., 2019: 19). In the game there are five positions, including: a) Setter is tasked with regulating the team's attack pattern, b) Middle blocker or middle hitter is the position or location of this player is near the setter, c) Libero is a defensive player, d) Outside hitter is a player who attacks from near the left net post, e) Opposite hitter or right side hitter is a player who attacks from the right side and blocks the opponent's attack. To increase high jumps, it is a good idea to do bench up and down exercises and skipping exercises because these two exercises are very beneficial for leg muscle strength. Jumping ability is closely related to the explosive power of the leg muscles, which is a combination of muscle strength and speed of movement (Putra, et al., 2023). Explosive power of the leg muscles or often referred to as "explosive power" plays a key role in various sports activities, including volleyball (Isabela, & Bakti, 2021). High jump ability is essential for effective smash, block, and jump serve. In volleyball, an effective jump allows athletes to overcome the height of the net and attack or defend the ball better (Bakar, et al., 2021). For example, in the smash technique, a high jump helps athletes hit the ball from a higher position, so that the ball can be directed sharply and is difficult for opponents to reach (Andriyanti, 2022). Likewise, in the block technique, a high jump allows athletes to block opponent attacks more efficiently. Previous research was conducted by Haroyadi, et al. (2024) with the title "The Effect of Skipping Exercises and Up and Down Bench Exercises on Jump Height in Extracurricular Male Volleyball Students of SMK Negeri 2 Jiwan" with the results of the study showing that there is an effect of skipping exercises on jump height in extracurricular male volleyball students of SMK Negeri 2 Jiwan, there is an effect of up and down bench exercises on jump height in extracurricular male volleyball students of SMK Negeri 2 Jiwan and skipping exercises have a better effect than up and down bench exercises. Another study was conducted by Pratama, F, et al. (2022) with the title "The Effect of Skipping Exercises and Going Up and Down Stairs on Jump Height in Volleyball Athletes of the Tunas Club, Tegal Regency", with the results of the study showing that skipping exercises have a greater effect on vertical jump height in volleyball athletes of the Tunas Club, Tegal Regency.

METHOD

This research uses quantitative research, using an experimental approach. Experimental research is research which intended for test hypothesis shaped causal relationship through manipulation of independent variables, while the control method can refer to the quality control method, the form of a study used in this study using the experimental method and the control method. By using the test given to athletes at the club by conducting a *pre-test* and *post-test*, this exercise will be carried out 3 times in 1 week and will be carried out for 1.5 months as many as 16 exercises. The design used in this study is a *one-group pretest-posttest* design. And the subjects will be done randomly. The advantage of this design is that a *pre-test* and *post-test* are carried out so that the difference in results due to the treatment given can be known with certainty.



Picture 1. Design "One-Group Pretest- Posttest"

With Information:

O₁ : Mark *Pretest* (before given *treatment* t)

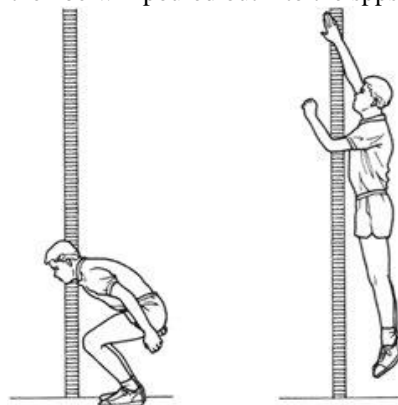
X : *Treatment* t or treatment

O₂ : Mark *Posttest* (after given *treatment*)

The research location is on the Hizbul Wathan volleyball court, Langkap Village, Burneh District, Bangkalan Regency, East Java Province. Time study This plan will implemented on month February by requesting a permit letter which will later be approved and will be given directly to the coach. The population used in this study were Hizbul Wathan volleyball athletes, with several criteria. Athletes who have registered with PBV Hizbul Wathan and actively follow the training when the schedule is given by the coach. So the author uses a sample from for athlete Which There is on PBV Hizbul Wathan with using *quota sampling technique*. *Quota sampling* is a technique for determining samples from population with criteria Which determined until amount needed . The criteria for athletes referred to as a reference by researchers are as follows:

- A. Alt Which active follow regular exercise in PBV Hizbul Wathan.
- B. Athlete Which Already aged 18-19 year And Already Once follow a event Which has been in make or in follow by PBV Hizbul Wathan itself.
- C. Athletes who have registered and have participated in training for approximately 3 months at PBV Hizbul Wathan.

According to Maksum (2012: 111). Instruments are measuring tools used to collect data in research. Broadly speaking, there are two categories of data collection tools, namely tests and non-tests. In research This tool collection data Which used is similar test to be relevant with material exercise Which given on sample, so a test instrument is used, volleyball skills. Maksum (2007: 1) states that measurement is the process of collecting data. information. So, When We has own test, And test is used to test the height of the jump, so in essence we are measuring the process, and we will get information in the form of numbers and not numbers. Before carry out *pretest* tall leap all subject Please provide an explanation of the aims, objectives and uses of the jump height test will done, as well as method do each each grain test Then the athletes do a *pretest* in the form of a *vertical jump* , after all have done *the pretest* , then the athletes are given *treatment* in the form of bench climbing and *skipping exercises*. And for the final stage, namely *the posttest* , *the posttest* data collection process is the same as the *pretest* stage. *pretest* only just *posttest* done after for athlete Already *treatment* is given and then *pretest* and *posttest* data will be found which will then be will poured out into the spps For know how much great influence.



Picture 2. Vertical Jump

Table 1. Norm Test Vertical Jump (Attached, 2015)

Norm	Age									
	9	10	11	12	13	14	15	16	17	18>
Good Very	16 "	16"	16 "	20 "	20 "	20"	25 "	25"	25"	26"
Good	14 "	14"	14 "	17 "	17 "	17"	23 "	23"	23"	24"
Enough	11 "	11"	11 "	14 "	14 "	14"	19 "	19"	19"	19"

	9"	9"	9"	1	11	11"	1	12"	12"	13"
Not enough				1	"		2			
				"			"			
Less than once	4"	4"	4"	5"	5"	5"	5"	5"	5"	8"

As for technique collection data which will be used in this research, namely tests and measurements. In tests and measurements, there will be three stages that must be carried out, namely tests, measurements, and evaluations. According to Sugiyono (2010: 308), data collection is the most important step in a study, because the purpose study in get data. With thus will collected data results *pretest* And *posttest* Which produced from test Which has conducted, before and after the students were given treatment. The researcher as the implementer in this research and at the time of data collection was assisted by the trainer as the implementer in the field in this case delivering the material or providing the training treatment. go on down seat And *skipping* has discussed previously between researchers and trainers at PBV Hizbul Wathan, Burneh District, Bangkalan Regency. In this study, data collection was carried out with a predetermined instrument, in this case the *Vertical Jump test* was carried out at PBV Hizbul Wathan, Burneh District, Bangkalan Regency. The procedure is as follows:

- Collection data done in PBV Hizbul Wathan Subdistrict Burneh Bangkalan Regency, Where all the athletes
- Pre-test* done on meeting First to all over volleyball athletes at PBV Hizbul Wathan with Steps: All athlete volleyball prepared in the field For do *pre- test* . Then all volleyball athletes were given a *pre-test* that had been determined, namely *the vertical jump*. The results from *pre-test* all over athlete volleyball collected to be analyzed
- Treatment (treatment). Athlete requested For prepare self in the field Which has prepared to follow the bench climbing and *skipping exercises*.
- Post- test* After all athlete volleyball given treatment through exercise up and down the bench and *skipping* then the volleyball athletes were given a *post-test*, namely a *vertical jump*, the same as *the pre-test*

The training program provided by the researcher is as follows, every week 3 training meetings are conducted by PBV Hizbul Wathan on Sunday, Tuesday, Friday. The first week's meeting until week to six given method exercise like below this.

Table 2. Training Program Go on Down Seat And Skipping

Exercise Weekly	Model Exercise	Training set	Time Do	Information
1	Warm up		60 minutes	
	Bench up and down	3 times	5 minutes	Rest 60 seconds/set
	<i>skipping</i>	2 times	5 minutes	Rest 60 seconds/set
2	Warm up		60 minutes	
	Bench up and down	3 times	5 minutes	Rest 60 seconds/set
	<i>skipping</i>	2 times	5 minutes	Rest 60 seconds/set
3	Warm up		60 minutes	
	Bench up and down	4 times	6 minutes	Rest 60 seconds/set
	<i>skipping</i>	3 times	7 minutes	Rest 90 seconds/set
4	Warm up		60 minutes	
	Bench up and down	4 times	6 minutes	Rest 60 seconds/set
	<i>skipping</i>	4 times	7 minutes	Rest 90 seconds/set

5	Warm up		60 minutes	
	Bench up and down	5 times	6 minutes	Rest 80 seconds/set
	skipping	4 times	10 minutes	Rest 120 seconds/set
6	Warm up		60 minutes	
	Bench up and down	5 times	8 minutes	Rest 90 seconds/set
	skipping	4 times	10 minutes	Rest 120 seconds/set

RESULT AND DISCUSSIONS

According to Nia Grace (2016: 5) Exercise is a process systematic with the aim of improving the physical fitness of an athlete with a chosen activity, while in general people say training or practicing which means to do an activity that is done repeatedly to increase knowledge and skills. Sajoto (1998: 119) state program exercise is a The program that is carried out 4 times a week, for 6 weeks is quite effective. However apparently for coach tend carry out program 3 times a week, to avoid chronic fatigue. With the duration of training is 8 weeks or more. Bench up and down training is a training method to train leg muscle strength. Bench up and down training is a form of training method to develop physical condition with the main target being *power* legs. Exercise go on down seat is Wrong One from *plyometric* training , Where according to Chu (In, Aprianto, 2014) explains that *plyometric* is a training method that emphasizes high-speed movements. On the other hand, According to (Ahmadi, 2007: 20) Volleyball is a complex game that is not easy for everyone to do. Because, in game volleyball needed coordination motion which can really be relied on to do all the movements in the game of volleyball. The game volleyball is game Which played by two teams, each team consisting of six players. And volleyball is a game that is not easy for everyone to do. Because it requires really reliable coordination movements in volleyball.

Beginning start the founding *club* ball volleyball Hizbul Wathan This Which came from Subdistrict Burneh Bangkalan Regency stand on year 2000 and *club* This Already often follow race Good That in Subdistrict Burneh, Bangkalan Regency and Madura, and the Hizbul Wathan volleyball *club* often wins competitions, and the Hizbul Wathan volleyball *club* also has an annual agenda, namely holding competitions. Good between all sub-districts Burneh And throughout the Regency Bangkalan. Reason researcher researching in *club* Hizbul Wathan This Because want to find out whether there is an effect of climbing up and down on a bench and skipping on ability tall leap athlete Which There is in *club* Hizbul Wathan This. In this study, the subjects involved were athletes with an age range of 18-19 years. The selection of this age is based on the consideration that this period is an ideal time to improve physical abilities.

This research was conducted on February 03 to March 15, 2025. *The pretest* was taken on February 03 and *the posttest* was taken on March 15. Bench Up and Down Exercise and Skipping on Jump Height Ability are presented in the following table :

Table 3. *Pretest* and *Posttest* Research Results Data

NO	NAME	PRE (cm)	POST (cm)
1	A	250	290
2	B	240	283
3	C	230	272
4	D	245	282
5	E	220	264
6	F	250	293
7	G	244	287
8	H	218	240
9	I	225	252
10	J	207	219
11	K	220	243

12	L	218	237
13	M	190	215
14	N	224	248
15	O	210	224

Results of descriptive statistical analysis of pretest and *post-test* Bench climbing and skipping exercises for athletes or players at the Hizbul Wathan volleyball club presented in the table below:

Table 4. Bench up and down and skipping exercises for jump height for athletes or players at the Hizbul Wathan volleyball club

Descriptive Statistics							
	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance
PRE	15	60	190	250	226.07	17,252	297,638
POST	15	78	215	293	256.60	26,920	724,686
Valid N (listwise)	15						

Based on the frequency distribution in table 4 above, the results of *the pretest* and *posttest* of the Up and Down Bench and Skipping Exercises on the Jumping Height Ability of athletes or players at the Hizbul Wathan volleyball club are based on the output above, the mean value of the Pre Test is 226.07 cm while for the posttest it is 256.60. So it can be concluded that the average training gain has a different average.

1. Prerequisite Test Results

a. Normality Test

The normality test is intended to determine whether the variables in the study has a normal distribution or not. The calculation of this normality test uses the *Kolmogorov-Smirnov Z formula*, with processing using the help of the SPSS computer program. The results are in the table below:

Table 5. Results of the Jump Normality Test

One-Sample Kolmogorov-Smirnov Test			Unstandardized Residual
N			15
Normal Parameters ^{a,b}	Mean		.0000000
	Std. Deviation		7.86381521
	Absolute		.216
Most Extreme Differences	Positive		.216
	Negative		-.122
Kolmogorov-Smirnov Z			.836
Asymp. Sig. (2-tailed)			.487
a. Test distribution is Normal.			
b. Calculated from data.			

Based on the output above, the results of the normality test obtained a significance value of $0.487 > 0.05$, so it can be concluded that the jump sample used is normally distributed.

2. Hypothesis Test Results

The t-test is used to test the hypothesis (H_0) which states "there is no effect of Up and Down Bench and Skipping Exercises on the Jumping Height Ability of athletes or players at the Hizbul Wathan volleyball club" and the hypothesis (H_a) which states "There is an effect of Up and Down Bench and Skipping Exercises on the Jumping Height Ability of athletes or players at the Hizbul Wathan volleyball club", based on the results of *the pretest* and *posttest*. If the results of the analysis indicate significant difference then Exercise Bench Up and Down and Skipping Exercises for High Jumping Ability in Athletes or Players at the Hizbul Wathan Volleyball Club. The conclusion of the study is stated as significant if the calculated t value $> t$ table and the sig value is less than 0.05 ($\text{Sig} < 0.05$). Analysis results the data obtained in the table below:

Table 6. Paired T-Test Results

Paired Samples Test		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Interval Difference	Confidence of the Upper			
					Lower				
Pair 1	PRE-POST	-30,533	11,575	2,989	-36,943	-24,123	-10.216	14	.000

Based on the table above Based on the output above, the significance value of $0.000 > 0.05$ means that there is a significant change in the results of the Up and Down Bench and Skipping Exercises on the Jumping Height Ability of athletes or players at the Hizbul Wathan volleyball club .

Based on the analysis of the research data, a significant increase was obtained in the group studied. Significant influence on the increase in Up and Down Bench and Skipping Exercises on the High Jump Ability of athletes or players at the Hizbul Wathan volleyball club . This study aims to train balance, strength, agility and explosive power , as well as measure the development of jumps in Up and Down Bench and Skipping exercises . The sequence of activities that must be carried out so that conclusions can be drawn are: (1) *a pretest* is held , (2) *treatment is given* in the form of a program training for 5 weeks, (3) then the last is a *posttest* which aims to find out whether or not there is balance and strength . To find out the difference or influence of increasing the influence of Up and Down Bench and Skipping Exercises on the High Jump Ability of athletes or players at the Hizbul Wathan volleyball club, it can be proven by the Paired Sample T-Test. will display the significance value. The results of the Paired T-Test show that there is a significant influence Increased influence of bench climbing and skipping exercises on the height of jumps in athletes or players at the Hizbul Wathan volleyball club .

CONCLUSION

Based on the analysis of the research results, it can be concluded that the Paired T-Test results show that there is a significant influence. The increase in the influence of Up and Down Bench and Skipping Exercises on the High Jump Ability of athletes or players at the Hizbul Wathan volleyball club . A significance value of $0.000 > 0.05$ was obtained from the results of the Up and Down Bench and Skipping Exercise experiment . This study has several suggestions that need to be conveyed in this study, the suggestions include the following:

1. This research is far from perfect. Therefore, it is recommended to conduct further research to make it a better research.
2. For players to be more active in practicing, especially to improve basic techniques. and his jumps in other sports games
3. For researchers who want to research with a similar title. It is expected to maximize research in order to get perfect research results.
4. As a coach or knowledge provider, you must look for a lot of references or knowledge that can be given to the athletes you are teaching.
5. And finally, stay enthusiastic and never give up for continued success.

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