



Effectiveness of Limited Training with Cone Obstacle and Jump on Smash Volleyball Ability

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Article History

Received February 2022
Accepted February 2022
Published Vol.11 No.(1) 2022

Keywords:

Cone; Jump; Smash;
Training; Volleyball

Abstract

The purpose of this research was to determine the effectiveness of the training using cone obstacle by jumping to improve the volleyball smash ability in athletes trained in the student activity unit of a public university in Medan. This study employed an experimental design with a one-group pretest-posttest design. The study was conducted at Student Activity Units at State Universities in Medan. The participants were 32 (F= 16 and M= 16) athletes who were being coached in the Volleyball Student Activity Unit. Collecting data used observations, interviews, and tests. Technique data analysis used Paired Sample t-test. The results showed that the exercise model using a cone hurdle with jumping had improved the athletes' volleyball smash skills even though the COVID-19 pandemic had not improved. The concept of a dissertation exercise with strict procedures for health protocols is the right solution so that athletes still have quality volleyball skills. The results of the study also have implications for understanding volleyball exercises during the COVID-19 pandemic, which limits activity.

How to Cite

Amansyah, Et al. (2022). Effectiveness of Limited Training with Cone Obstacle and Jump on Smash Volleyball Ability. *Journal of Physical Education, Sport, Health and Recreation*, 11 (1), 53-58.

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INTRODUCTION

Volleyball is a sport that is not only enjoyed by many Indonesians but is also taught in schools or colleges. One of the public universities in Medan even opened a Faculty of Sports Science with a variety of study programs, such as Physical Health and Recreation Education, Sports Coaching Education, and Sports Science. To support expertise in the study program, the university has a sports student activity unit that fosters 11 sports. One of the sports that continues to be fostered and developed is volleyball because it has male and female athletes and they often become university representatives in various sports competitions or championships. Thus, this activity provides value that can introduce the university and demonstrate the quality of the sports science faculty. This means that the university always supports and develops various activities that can improve the quality of education in the field of sports.

Therefore, volleyball is one of the priorities for student activity units to continue to provide training to athletes so that their abilities will be better and continue to improve. Moreover, the COVID-19 pandemic has caused everyone's activities to be limited, including sports. Even teaching and learning activities have to adopt distance learning (Qazi et al., 2021), which includes sports teaching and learning (Finlay et al., 2022). The results of a survey from 26 countries on the activities of more than 4500 athletes worldwide show that the pandemic conditions have an impact on the competitive data of athletes and recommend adapting to sports at a safe level (Peña et al., 2020). Also approved by the health authorities of the relevant region (Hughes et al., 2020). However, the university continues to make various efforts to develop athletes. The volleyball training program is designed according to current conditions and is still carried out following health protocols. Moreover, as knowledge about COVID-19 continues to grow, collaborations between international sports bodies have also facilitated global consensus on best practices and recommendations for sport (Yeo, 2020).

Based on the results of the evaluation of volleyball training activities fostered by the university student activity unit and the online observation of volleyball practice during the COVID-19 pandemic for the 2020-2021 academic year, it was concluded that athletes showed a decline in volleyball smash abilities. The training model taught online via zoom does not show an increase in volleyball smash ability. Some of the

problems that were found were 1) the training model was less interesting and varied, 2) the exercises that were done alone did not provide balance in doing the volleyball smash, 3) the athletes had difficulty doing the smash exercises with the obstacles the coach had given them, and 4) Athletes have difficulty applying various jumping training concepts given because they have to practice alone at home.

Many previous studies have explained the challenges of sports activities during the COVID-19 pandemic. Athletes must balance their physiology to keep training and healthy (Wong et al., 2020). Athletes also experienced a significant reduction in training frequency and time spent completing various training-related activities (Jagim et al., 2020). Therefore, in carrying out training activities, you must pay attention to 4 main principles, namely the preparation of exercise management and health facilities by health protocols, training concepts, assessment and training reference guidelines according to government regulations, and COVID-19 risk management in training camps (Angga & Kardiyanto, 2021). Moreover, volleyball practice activities involve several people. This means that the training of student activity units at the university must consider the use of a fairly effective training model, such as for the basic volleyball movement, namely volley (Samsudin et al., 2021).

From some of these findings, it can be concluded that the training program that must be given is a special training concept that can be done individually or in a limited team. Moreover, the COVID-19 pandemic has presented different challenges to coaches and athletes in doing physical exercise, but also on mental health (Woods et al., 2020). Should they continue to train or not? (Halabchi et al., 2020) because of the challenges that athletes must face related to the dangers of the virus to health and training needs.

Thus, the gap from this research is the effectiveness of limited exercise for volleyball athletes at the university activity unit in Medan using a cone hurdle by jumping to improve volleyball smash skills. The concept of the exercise designed in this study has been adapted to the training needs of improving the volleyball smash ability. The needs analysis was taken from the volleyball smash training evaluation document. In addition, the training concept set out in this study also takes into account the conditions of the covid-19 pandemic and is by the health protocol procedures that have been set by the local government covid-19 task force unit and the university.

The purpose of this research was to deter-

mine the effectiveness of the training using cone obstacle by jumping to improve the volleyball smash ability in athletes trained in the student activity unit of a public university in Medan. Therefore, the results of this study are also expected to provide benefits to the concept of volleyball smash training, especially in the era of the covid-19 pandemic. Exercises that are carried out must pay attention to the concept of health and the environment. In addition, the university also continues to provide opportunities and opportunities for student activity units in the field of sports to develop and nurture athletes by the rules of the Covid-19 task force unit.

METHODS

This study employed an experimental design with a one-group pretest-posttest design. A one-group pretest-posttest design is a research method that is used to determine a group's behaviour by presenting the effect of treatment on the sample. This method distinguishes itself by providing the same treatment to two groups (Allen, 2017). The study was conducted at Student Activity Units at State Universities in Medan. The participants were 32 (F= 16 and M= 16) athletes who were being coached in the Volleyball Student Activity Unit. Participants are in the age range of 18 to 22 years, athletes who have participated in competitions, and athletes who have mastered the basic techniques of playing volleyball.

Collecting data used observation, interviews, and tests. Observations are used to determine the treatment process in implementing exercises using cone obstacles by jumping for volleyball smash activities. Interviews were conducted to determine the participant's response to the application of the exercise using a cone hurdle by jumping. Observations and interviews were used to support the main data, namely tests. The tests given are in the form of pre-test and post-test. The test procedures carried out in this study are:

1. Volleyball smashes instrument to measure the direction of the ball and score the results of the ball hitting the target that enters the field with a range of 1-5 according to the specified area.
2. The equipment prepared is volleyball, volleyball net, stopwatch, volleyball court that has been adjusted to the needs, whistles, cones, and scoring sheets.
3. Before the implementation of the test, the trainer gave a pre-test before being given a smashing exercise using a cone hurdle by jumping, after the treatment activity or

giving the exercise was completed, it was followed by giving a post-test.

4. Before the test begins, the test person has explained the test to be carried out and then warmed up according to the test to be carried out.
5. Participants are allowed to do 5x volleyball smashes.

The training program in this study was short because the treatment given as part of the volleyball game was a smash. The following are the training activities given to the participants, including (Fajri, 2017):

- a. Warming up: to prepare the participant's body before doing the exercise.
- b. Core Exercises as follows:
 1. This exercise uses a cone and is marked with a circle for the sideways and three steps forward
 2. Athletes are divided into 2 groups depending on their needs
 3. Athletes stand in a line three meters in front of the net
 4. Each group/athlete performs sideways movements right/left and three steps forward and swings arms without jumping
 5. This exercise is carried out alternately among the groups
 6. Every athlete must be able to maintain his body position (balance)
 7. This activity will alternately be carried out with an adjusted time
 8. Perform this exercise repeatedly while improving the technique of starting hand pulls, side movements and when three steps forward and correctly
- c. Colling down is given at the end of the exercise so that the body temperature decreases and calms.

Test scoring system (Fajri, 2017);

- a. The score consists of 2 inseparable parts, the target number and the ball speed time.
- b. Score 0 (zero) if my hand hits the net, the ball doesn't over the net and/or the ball falls off target.
- c. The ball that falls on the target line is counted as having entered the target with the higher number.
- d. The score is the sum of the numbers collected from the 5 strokes minus the amount of time taken from those 5 strokes

Technique data analysis used Paired Sample t-test. The hypothesis of the study is;

Ha: There is the influence of the training using cone obstacle by jumping to improve the volleyball smash ability

Ho: There is no influence of the training using cone obstacle by jumping to improve the volleyball smash ability.

RESULTS AND DISCUSSION

The data that has been obtained were tested for homogeneity and normality before the t-test was carried out. Data analysis to determine normality using the One-Sample Kolmogorov-Smirnov Test. Table 1 shows the significant value of Asymp. Sig. (2-tailed) a pre-test was 0.983 greater than 0.05 and the significance value of Asymp. Sig. (2-tailed) post-test is 0.933 greater than 0.05, so it can be concluded that the research data is normally distributed.

The output of the test of homogeneity of variances which shows the significance value (Sig) of the volleyball smash score test variable for pre-test and post-test of 0.480. Because the Sig value is $0.480 > 0.05$, it can be concluded that the variance of the smash test data on the pre-test and post-test is the same or homogeneous. After the normality test and the homogeneity test of the data was carried out, an analysis test was carried out to see if there was an effect of the smash training model using a cone obstacle by jumping.

The correlation coefficient of the smash training model before and after being given the smash training model treatment, which is a sig value of $0.00 < 0.05$. So the conclusion is that there is a significant relationship.

The result of the paired Sample Test which shows the value of sig (2-tailed) is 0.00. Because of the value of $\text{sig} > 0.00$, it can be concluded that there is a significant difference in the average ability of volleyball scores. The average result of the athlete before being given the training model was 81.11 and after being given the training model 118.78, meaning that there was an increase resulting from the pre-test and post-test so that the training model using cone hurdles with jumping for volleyball smashes had increased. The following is a comparison of test results between athletes who have not been given treatment with an exercise training model using a cone with a jumping obstacle (pretest) and athletes who have been treated with an exercise model treatment using a cone with a jumping obstacle (post-test) based on the diagram:



Graph 1. Comparing the Result of Pre-test and Post-test

In the game of volleyball, it takes a skill that must be possessed by every individual in mastering the basic techniques of volleyball. Thus, the attacks carried out can produce success. One form of attack in playing volleyball is a smash. Smash is one type of attack in volleyball. This attack is carried out if there is a space opportunity in the opposing team in the hope that if the ball is directed to that area, the opponent cannot take it. The concept of the smash is a slow smash. While the hard smash is the most important and most interesting part of a volleyball match. It is also the most difficult technique to learn of all the techniques in volleyball. One form of exercise that can be trained in jumping and with all your might hitting an object that moves in the form of a ball past an obstacle so that the ball lands in an area bounded by a line.

In this study, it was shown that the practice of using obstacles through cones accompanied by a jump dissertation had trained the ability of hard volleyball smashes to produce precise ball attacks that were difficult for the opponent to handle. In addition, the volleyball smash practice process using the initial type of exercise, namely the use of cone hurdles by jumping during the covid-19 pandemic, has had a positive impact on improving the ability of volleyball hits. This means that the training process that is designed with the right restrictions and procedures can produce the right volleyball practice activities. Rifki & Ariston (2020) showed that the kite-jumping guide model for volleyball smash practice was quite effective.

Thus, the Covid-19 pandemic condition must be addressed appropriately so that the impact of COVID-19 does not affect sports training. Especially now that there has been a decrease in the spread of the Covid-19 virus, this limited exercise can still be done. Professional athletes can also do exercises taking into account health safety conditions (Carmody et al., 2020; Jariono et al.,

2021). The ongoing global pandemic caused by Coronavirus II (SARS-Cov-2 or COVID-19) has led to the cessation of sporting competitions and the ongoing closure of training facilities. This is a fundamental challenge for both amateur and elite sports professionals. Although recommendations have been given for team sports athletes to maintain general and sport-specific conditioning (Lattella & Haff, 2020). In addition, during the pandemic, you can also take advantage of training models with interactive multimedia designed according to the needs of athletes (Suhairi et al., 2020), it used a visual model (Zhou et al., 2020).

The results of data analysis also show findings that volleyball exercises for athletes in the university's Student Activity Unit can still be carried out according to the rules set by the university's covid-19 cluster. Some of the findings that can be concluded include:

- a) Athletes are more motivated and motivated in carrying out exercises because of the challenges in volleyball smash drills.
- b) Athletes are more motivated to change the hard and monotonous culture of volleyball smash training into a fun but serious training culture in training.
- c) Athletes are more motivated and motivated to get new exercises.
- d) Athletes gain training experience by balancing the dangerous conditions of the covid-19 pandemic and increasing volleyball smash abilities.
- e) Athletes are motivated to maintain their health both food and also comply with health protocol rules so that they can continue to carry out limited exercise activities.

CONCLUSION

The data analysis concludes that training using cone obstacles by jumping has a positive effect on increasing volleyball smash skills, even though the training activities provided are in the conditions of the covid-19 pandemic. The training activities provided to the athletes have been designed to follow the crowd activity procedures set by the Covid-19 task force at the university. In addition, the athletes also maintain their health by being obedient to the rules and taking care of their food. This means that these findings provide an understanding that during the covid-19 pandemic, volleyball smash training activities can still be carried out with the requirements of comp-

lying with the regulations that have been set so that the virus does not spread. This is an empirical implication that can be understood by coaches to improve the ability of volleyball athletes so that when there is competition, they can still participate in matches.

This research is still limited to the use of volleyball smash drills using cones and jumping obstacles. While the variations of volleyball smash training techniques are still many so that the results of this study can still be developed. The next researchers can develop jumping, repelling, hitting or landing exercises that are associated with volleyball smashes. Thus, the results of this study can also be used as a form of training model during the pandemic. Training patterns can still be developed so that they are not monotonous (Islam, 2019) but provide motivational stimulation for athletes.

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