



The Effect of Push Up and Pull Up Exercises on Shooting Free Throw Results in Basketball Athletes in Jembrana Regency

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Abstrak

A shooting free throw is a shot awarded to a player to score, as a result of being distracted by an opposing player in an attempt on a field shot. To master it, systematic training is needed, one of which is push-up and pull-up exercises. This study aims to determine the effect of push-up and pull-up exercises on the results of shooting free throws for basketball athletes in the Jembrana Regency. This research was carried out using a quasi-experimental research method with a pretest and post-test approach with a control group design. The population of this study was basketball athletes in the PERBASI Region, Jembrana Regency, with a sample of 30 athletes. Measurements were carried out during the pretest and post-test, and the push-up and pull-up exercise program was carried out 3 times a week, which was carried out for 5 weeks. The results showed that: 1) Push-up and pull-up exercises affected the results of shooting free throw scores for basketball athletes in Jembrana Regency ($p = 0.000 < \alpha$); 2) There is a difference in the results of shooting free throws for basketball athletes who are given push-up and pull-up exercises compared to ball athletes who are only given conventional training ($p = 0.000 < \alpha$). From the results of this study, it means that push-up and pull-up exercises can increase free throw shooting scores by increasing the arm muscle strength of basketball athletes. Trainers can provide push-up and pull-up exercises to be able to improve the physical abilities of athletes so that they get achievements in the sport of basketball games.

Keywords: Athlete Training, Push Ups, Pull Ups, Basketball Game

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Artikel Info:

Submitted: 06/10/2022

Revised: 23/11/2022

Accepted: 29/11/2022

Published: 30/11/2022

How to Cite: Prasetya, T, P., Indrawan, K, A., Rusmayan, N, G, A, L. (2022). The Effect of Push Up and Pull Up Exercises on Shooting Free Throw Results in Basketball Athletes in Jembrana Regency. *Journal Coaching Education Sports*, 3(2), 171-178. <https://doi.org/10.31599/jces.v3i2.1548>

Author's Contribution: Author's Contribution: a) Research Design; b) Data Collection; c) Statistical Analysis; d) Preparation of Manuscripts; e) Fund Collection



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A. Introduction

Sport is a form of individual and community education that prioritizes physical movements that are carried out consciously and systematically towards a higher quality (Hita, 2020). Sport in the modern era as it is now is increasingly becoming a basic need for every human being in the context of existence and placing oneself in a strategic position by the development and progress of the times. Sports can provide a foundation for forming a strong personality, a healthy and resilient soul, and creativity in dealing with dynamic change and competition (Hita et al., 2020).

The benefits of sports include training as an educational tool, a means of achieving achievements, livelihoods, cultural media, maintaining health, and a positive lifestyle among the community, with the main goal of forming whole individuals who are physically and spiritually healthy (Hita et al., 2021). The majority of countries pay attention to sports, because sports do not only function to simply get physical fitness, but sports can also contribute to shaping human character. These various goals and benefits are also found in one of the most popular sports, namely basketball.

The game of basketball is very

interesting and can be played by all age groups, besides that the players are also required to have playing skills, physical fitness, and high body strength. With more and more sports centers and more education in schools, as well as more and more sports facilities, this sport can be played by anyone. The game of basketball is an active game and solid teamwork. The game of basketball is much loved by boys and girls. Basketball is a big ball game that has complex movements/techniques, namely a combination of walking, running, jumping, and elements of strength, speed, and accuracy. The game is played by two teams, each consisting of five players, with the goal of each team to enter the ball into the opponent's basket to get a point, and prevent the other team from entering the ball to score a point (Saichudin & Munawar, 2019: 1). To determine the points in a basketball game, namely by how much the ball enters the hoop, the more balls enter, the more likely it is to win in this game. In scoring points, basketball players need technique, capable shooting skills, and good accuracy in the game of basketball. In addition to the cooperation of team members, each individual must have a good playing technique, one example of this technique is shooting or shooting (Adityatama, 2017).

The shooting technique in basketball games is a very important skill in basic technical basketball, in addition to passing, dribbling, defending, and rebounding which can give a player a great opportunity to score (Hardiono, 2018). Actually, shooting can cover the weaknesses of other basic techniques. There are various types of shooting movements in basketball games, such as shooting under the basket, lay up, shooting three points, medium shooting, and shooting free throws. One of the shots in a basketball game is a free throw (Malik & Rubiana, 2019).

Shooting free throws are shots that are awarded to a player to get a score, as a result of being disturbed by an opposing player in a field shot attempt (Apriansyah et al., 2018). The free throw is taken behind the free throw line without obstruction. Free kicks are very important because free kicks are one of the supports for victory in a match. Success in shooting does not appear by itself, but there are several factors that can support this success, one of which is the training factor (Nugroho, 2013). There are many ways or methods of conveying training material to increase free throw results so that students master the material being taught more quickly and can apply it to the right situation (Sari, 2018). Practice can help reduce shooting failures. In junior high school students, we can see

that the biggest failure in making free throws is not getting the ball into the hoop correctly. This is caused by errors in the free throw technique and the lack of ability of the hand muscles to contract when doing free throws. There are indications that the result of the shot by the player is because the player cannot estimate the strength when shooting the ball so the ball goes too far or does not reach the basketball hoop (Abady, 2020). This is caused by the lack of maximum hand muscle strength when shooting free throws, because when shooting, it is the hand muscles that play an important role, if the hand muscles are not trained, the shot will be far from the target (Khurrohman et al., 2021). Therefore, there must be the right training method to make the hand muscles trained and can reduce failures in shooting the right target ball.

B. Method

The location of research was carried out in the Dauhwaru field which is located on Jalan Ngurah Rai, Negara, Negara District, Jembrana Regency, Bali Province. When the research was carried out in the Even Semester of the 2022/2023 Academic Year. The type of research used in this research is the quasi-experimental method. The experimental method is a method that aims to determine the data obtained through a measurement process to obtain objective,

quantitative data, and the results can be processed statistically with the aim of how far the influence of push-up and pull-up exercises has on the ability to shoot free throws in basketball athletes. Jembrana district (Saputra et al., 2018).

The type of instrument used in assessing aspects of an athlete's ability is the assessment of psychomotor aspects based on the athlete's performance in performing the free throw shooting technique in a basketball game.

This study uses statistical analysis on the grounds that the data obtained in this study is quantitative data in the form of numbers because in this study it is the value of a test from the experimental group data that has been matched to each individual so to test the significance using the t-test with a short formula (short method) (Nugroho, 2013). The data obtained were processed using statistical techniques using the t-test formula for correlated samples, for hypothesis testing using a significance level of 5% and the degrees of freedom for the number of pairs reduced by 1, namely $N-1$.

C. Result and Discussion

The findings of the analysis results in this study were compared with the results of previous studies and relevant theoretical reviews.

4.3.1 The effect of push-up and pull-up

exercises on the results of shooting free throws in Jembrana District basketball athletes

The results of the analysis found that push-up and pull-up exercises had an effect on the results of shooting free throw scores for basketball athletes in the Jembrana Regency. This is evidenced by the increase in the free throw shooting measurement score between the pretest and post-test. This can be seen from the increase in the score scored by shooting free throws after doing push-up and pull-up training. These findings are supported by research conducted by Wahyudin and Muktarsyaf (2019) which proves that push-up and pull-up exercises can increase arm muscle strength in basketball athletes. In addition, Burhan and Herlina's research (2022) states that giving push-up and pull-up exercises to basketball athletes can affect their mastery of the chest pass technique. So it can be concluded that these two exercises can significantly improve the ability of basketball athletes to make shots, which comes from the physical improvement of their arm muscles.

Push-up and pull-up exercises have been shown to increase arm strength in basketball athletes. Muscle strength (power) can also be called explosive power to support the activities of each sport. According to Widiastuti (2011), power is a very important movement ability to support activities in every sport. Power can be called the ability to apply force in a short

time where the muscles provide the best possible momentum to the body to carry the desired distance (Ramdhan & Wimanadi, 2019). Meanwhile, Sukirno (2012) explained that arm strength is the ability of a group of arm and shoulder muscles to contract maximally to overcome or fight the load needed in a basketball game. In addition, strength is a very important element in sports activities, because strength is the driving force, and prevents injury (Oktavyani, 2021). Yenny et al. (2012), explained the arm muscles that play an important role including the trapezius, bicep, rhomboid, deltoid, and tricep finger muscles. So it can be concluded that muscle strength is very important for basketball athletes, especially when throwing a basketball during a match.

This research has scientifically proven that push-up and pull-up exercises can improve the performance of basketball athletes. However, this study has not compared push-up and pull-up exercises in different groups. Research conducted by Meirizal and Rusmana (2018) has proven that the method with push-up exercises is more effective than pull-up exercises in improving basketball chest pass abilities. Burhan and Herlina's research (2022) also states that push-up exercises provide a better increase in ability when compared to pull-up exercises. Push-up training is a

form of exercise that is well-known by various groups, so it is very easy for athletes to do push-ups. This push-up exercise does not require a large area and can be done indoors or outdoors. When compared to pull-up exercises, this exercise tends to be unusual to do because of the problem of the weight that has to be lifted, and the unfavorable condition of the single bar (Meirizal & Rusmana, 2018). In this study, researchers combined these two exercises with the aim of producing maximum muscle strength by combining exercises that focus on arm muscle strength, and it has been proven that the combination of these two exercises can have a significant effect on the physicality of basketball athletes.

4.3.2 Differences in the results of shooting free throws for basketball athletes who are given push-up and pull-up training and ball athletes who are only given conventional training.

The results of the analysis showed that there was a significant difference between the group that was given push-up and pull-up exercises when compared to the group that did conventional exercises, and it was proven that push-up and pull-up exercises gave a better free throw shooting score. The average post-test measurement results in the experimental group were higher than the control group. So it can be

concluded that the provision of push-up and pull-up exercises is better than conventional training in increasing free throw shooting scores in basketball games. Conventional training is adapted to the usual training program given during basketball practice.

Exercise is an activity to improve the quality of the function of the human body's organ systems so as to make it easier for athletes to perfect their movements (Mylsidayu & Kurniawan, 2015). Training is the process by which an athlete is prepared for the highest performance (Bompa & Haff, 2009). In general, the purpose of training is to help coaches, trainers, and sports teachers to able to apply and have conceptual abilities and skills in helping reveal the potential of athletes to reach peak performance (Mylsidayu & Kurniawan, 2015).

In this study, athletes who took part in the study carried out training for five (5) weeks. According to Bompa and Haff (2009: 47), there is a lot of evidence that supports the use of a training frequency of 2-6 weeks, but usually, it is 4 weeks where the load increases in the first 3 weeks in which there is an accumulation of fatigue, then followed by an unloading phase in the 4th week. In determining the frequency of practice one must really determine the limits of one's skills because after all, one's body cannot adapt faster than the limit of his skills. Based on this, in this study, the

frequency of research used was 3 times a week with a day's rest between training and the duration of the training was 5 weeks or 15 training times not included in the implementation of the pretest and post-test.

There are several factors that can affect the increase in muscle strength besides doing exercises. Nutrition is an important thing in the process of increasing leg muscle power. Nutrients are needed by the body because they have great benefits for human growth and development (Irianto, 2006). Nutritional needs must be met properly because the process of rapid growth in high activity can affect muscle strength (Almatsier, 2009). Therefore, this study has not been able to control the factors that can influence the results of the study apart from the given push-up and pull-up exercises. This is a limitation of this research.

D. Conclusion

Based on the results of research data analysis, it was concluded that push-up and pull-up exercises had an effect on the results of shooting free throw scores for basketball athletes in the Jembrana Regency. There are differences in the results of shooting free throws for basketball athletes who are given push-up and pull-up exercises compared to ball athletes who are only given conventional training.

E. Acknowledgements

Thanks to all parties who have helped in the completion of this article

F. Conflict of Interest

No Conflict of interest

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