

The Effectiveness of Jump to Box Training on Jump Shoot Ability in Handball Games

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Abstract

Inappropriate techniques for jumping shooting in handball games include body position, shot angle, or hand techniques which affect the accuracy and power of the shot. Players must be able to shoot the ball accurately into the goal. This involves using the eyes to identify targets and fine control over the power of the shot. The aim of this research is to determine the effectiveness of jump to box training on jump shooting ability in handball. The method used uses a quantitative method of one group pretest posttest experimental design. The research was carried out by SMP Negeri 1 Kendari, namely 20 students who took part in extracurricular activities. The instrument used was a handball jump shoot ability test for 60 seconds using the jump to box training method. Based on hypothesis testing using the t-test, the research results obtained were $5.724 >$ from t table 2.093, and obtained a value of $0.000 < 0.05$, it can be concluded that there is a significant influence of jump to box training to improve jump shooting ability in handball games.

Keywords: Training; Jump To Box; Jump Shoot; Handball.

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INTRODUCTION

The game of handball is an exciting and competitive sport that involves a combination of physical skills, tactics, and teamwork. Players and coaching teams need to focus on developing individual skills and team strategies to achieve success in this game (Rahayu & Budiman, 2020). The game of handball has basic rules that must be followed. These include the size of the field, the number of players on each team, the length of the match, and the rules for scoring goals. The match usually consists of two rounds at a certain time. In the game of handball, there are several different player positions. Field players, who score goals, and goalkeeper players, whose job is to prevent goals. Some defensive players must prevent opposing players from scoring goals (Budi & Febriani, 2019). The main goal in handball is to score goals by throwing the ball into the opponent's goal. Points are scored when the ball crosses the opponent's goal line ((Pueo et al., 2022). Several basic techniques must be mastered in the game of handball, such as throwing, catching, dribbling, and jump shooting (Yusuf et al., 2023). One of the basic techniques that must be mastered is the jump shoot.

The ability to jump shoot in handball is a very important skill for a player. Jump shoot is the act of jumping and shooting the ball into the opponent's goal when the player is in the air. This ability allows players to score goals accurately and overcome the opponent's defense (Jakšić et al., 2023). Jump shooting ability requires mastery of basic techniques which include foot placement, body posture, arm use, and eye focus. Players must be able to jump

high, maintain balance, and shoot the ball accurately into the opponent's goal (Csató, 2021). The ability to jump high and maintain balance in the air requires good leg muscle strength and good body coordination. Strength training such as squats, jumping rope, and cardiovascular exercise can help in improving jumping ability (Belcic et al., 2023).

Players must be able to shoot the ball accurately into the goal. This involves using the eyes to identify targets and fine control over the power of the shot. Intensive training in developing shooting accuracy and speed is essential (Foretic et al., 2022). Jump shooting ability also involves understanding the game situation. Players must know when is the right time to jump shoot, such as when the opponent's defense is weak or when they have the best chance to score a goal. Jump shooting ability requires consistent practice. Players need to practice regularly to improve technique, strength, and accuracy (Burger et al., 2023). The jump shoot ability is often used in different game situations. Players must be able to adjust their techniques and reactions depending on the situation, such as fast attacks, slow attacks, or attacks under pressure from the opponent's defense. To improve your jump shooting ability, you need jump to box training (Anggara & Rahmat, 2020).

Jump to box training is designed to improve the strength, speed, and coordination of the muscles needed in jumping and shooting (Hassan et al., 2023; Andersson et al., 2019). This includes the leg muscles, core muscles, and arm muscles needed for the jump shoot (Nursantiko et al., 2022). This exercise allows players to train the important muscles involved in jumping high and shooting accurately, two very important skills in handball (Petruzela et al., 2023). Jump to box helps in developing leg muscle strength, especially the thigh muscles and calf muscles. This excess strength can help players jump higher, allowing them to overcome opposing defenders and score goals (Wagner & Hinz, 2023). This exercise also improves coordination and accuracy. Players must coordinate their jumping and shooting movements to hit the target (square) precisely. This can help in improving their jump shooting accuracy. Jumping is an important part of handball (Gaamouri et al., 2023). By practicing jumping consistently, players can improve their ability to jump high, which is crucial in scoring goals or blocking opponents' attacks. The effectiveness of exercises varies depending on individual needs and skill levels. Players with different strengths and skills may require different types of training to achieve optimal results (Hussein et al., 2022). Jump to box training should be integrated into the overall handball training program. This includes technique training, strength training, cardiovascular training, and other relevant exercises (Eils et al., 2022).

Research conducted by Cetin & Ozdol, (2012), which discusses jump shoots and strength training in handball games. This research discusses a program for implementing handball training which was carried out for 12 weeks with implementation time 3 times a week, utilizing push ups and vertical jumps as the exercises carried out. There are differences in the research, namely using jump to box training to see jump shooting ability in handball games, but this research has something in common, namely using a measurable training program to improve the ability of the aspects studied.

One of the main problems is inappropriate technique in jumping shooting in handball, namely body position, shot angle, or hand technique which affects the accuracy and power of the shot. Limited practice time at school or lack of access to sports facilities. Lack of guidance from a handball coach or instructor can be a problem. Students need good guidance to develop their skills properly. Low motivation or lack of interest in handball can reduce students' desire to improve their jump shooting ability. The ability to jump shoot requires physical strength and flexibility. If students have a low level of physical condition, this can affect their ability to jump shoot.

The pressure of playing in a match can affect a student's ability to jump and shoot well. Low tactical knowledge can be an obstacle. Mental abilities such as focus, concentration, and pressure management are important aspects of jumping and shooting successfully. Students who have weak mental skills may experience problems in game situations. Therefore, jumping-to-box training helps increase the strength of the muscles needed to jump. This can help players to more effectively beat the opponent's defense and create space for jump shots. So this research aims to determine the effectiveness of jump to box training on jump shooting ability in handball.

METHOD

The design used in this research is the initial test (O1), namely the handball jump shoot ability test, followed by treatment (X), namely the jump to box exercise, and ending with the final test (O2), the handball jump shoot ability test (Sugiyono, 2017). The research was carried out at SMP Negeri 1 Kendari, with 20 students taking part in extracurricular activities. The sampling technique was carried out using total sampling, namely the entire population sampled, totaling 20 people. The instrument used is a handball jump shoot ability test for 60 seconds, for the training method using jump to box training with maximum ability (Belcic et al., 2023). Students do the exercise 30 times with medium (70%), heavy (80%), and light (intensity) training (60%). Held 3 times a week for 18 meetings. Then, after

carrying out the training, it was continued with the poet test, which was another test of jump shoot ability in the game of handball. The reason is that by using training intensity you can see the student's ability to perform jump to box training with initial maximum ability, so that you can determine how many sets and repetitions are given.

The data analysis technique uses a prerequisite analysis test with a data normality test to see whether the data to be processed is normal or not, with data distribution using Kolmogorov Smirnov, if the significance is greater than 0.05 it means it is normal, but if the data is smaller than 0.05 it means abnormal. The next test is to use the homogeneity test to see the distribution of the values to be analyzed and come from a homogeneous population. Followed by hypothesis testing which is the final test that aims to determine the conclusion to calculate the pretest and posttest whether there is a significant improvement, using SPSS version 26.

RESULTS AND DISCUSSION

Implementation of pretest and posttest results on handball game jump shoot ability data based on mean, standard deviation, minimum, and maximum is as follows:

Table 1. Descriptive of pretest and posttest handball jump shoot ability

Variable	Maximum	Minimum	Mean	Standard Deviation
Handball jump shoot pretest	23	16	19.75	1.83
Handball jump shoot posttest	27	20	23.35	2.13

Based on the results of the pretest descriptive analysis of jump shoot ability in handball, the maximum value was 23 times, and the minimum value was 16 times, with a mean of 19.75, and a standard deviation of 1.83. Meanwhile, the posttest for jump shooting ability in the game of handball obtained a maximum score of 27, and a minimum score of 20, with a mean of 23.35 and a standard deviation of 2.13. The frequency distribution in this study can be seen in the following table:

Table 2. Pretest frequency distribution of handball jump shoot ability

Interval	Frequency	Percentage
16 – 17.32	2	10%
17.33 – 18.65	3	15%
18.66 – 19.98	3	15%
19.99 – 21.31	10	50%
21.32 – 23	2	10%
Total	20	100%

From the pretest results on handball jump shoot ability, the interval was 16 - 17.32, with 2 people, and the percentage was 10%. For the interval, it was obtained at 17.33 - 18.65,

with a total of 3 people, and the percentage was 15%. For the interval, it was obtained at 18.66 - 19.98, with a total of 3 people, and the percentage was 15%. For the interval, it was obtained at 19.99 - 21.31, with a total of 10 people, and the percentage was 50%. For the interval, it was obtained at 21.32 – 23 with a total of 2 people, and the percentage was 10%. Based on the frequency distribution results, it can be seen in the following histogram:

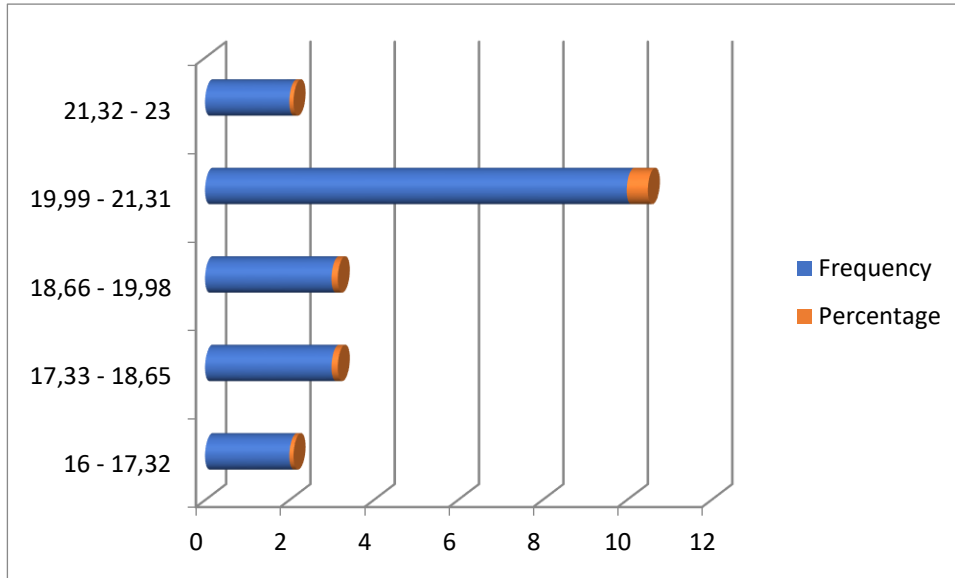


Figure 1. Pretest handball jump shoot ability in histogram

Table 3. Posttest frequency distribution of handball jump shoot ability

Interval	Frequency	Percentage
20 – 21.32	4	20%
21.33 – 22.65	3	15%
22.66 – 23.98	5	25%
23.99 – 25.31	4	20%
25.32 - 27	4	20%
Total	20	100%

From the posttest results on handball jump shoot ability, the interval was 20 - 21.32, with a total of 4 people, and the percentage was 20%. For the interval, it was obtained at 21.33 - 22.65, with a total of 3 people, and the percentage was 15%. For the interval, it was obtained at 22.66 - 23.98, with a total of 5 people, and the percentage was 25%. For the interval, it was obtained at 23.99 - 25.31, with a total of 4 people, and the percentage was 20%. For the interval, it was obtained at 25.32 – 27 with a total of 4 people, and the percentage was 10%. Based on the frequency distribution results, it can be seen in the following histogram:

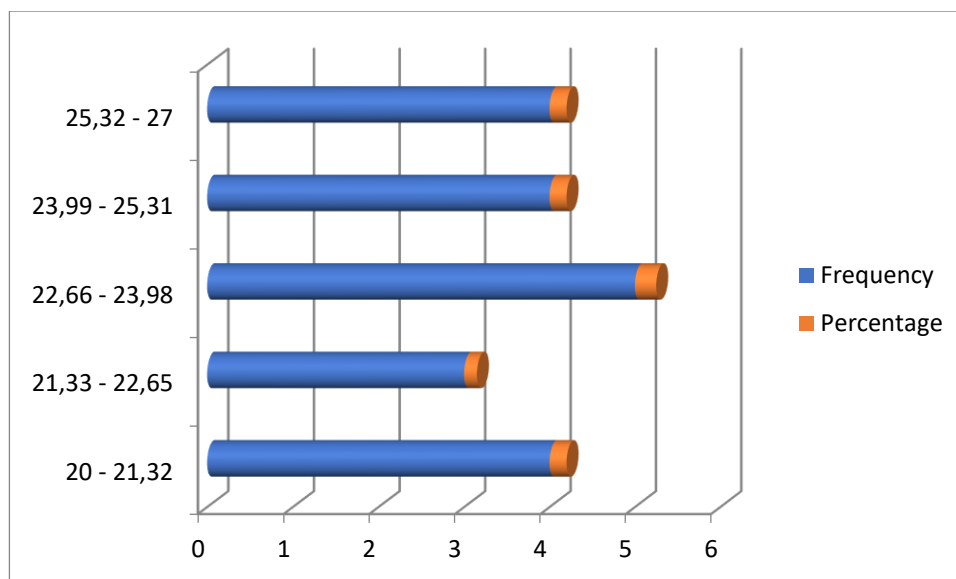


Figure 2. Posttest of handball jump shooting ability in a histogram

Normality Test and Homogeneity Test of Research Results

Table 4. Normality and homogeneity of pretest and posttest research data on handball jump shoot ability

Variable Data	Normality Test		Homogeneity Test	
	<i>P</i>	Significance	<i>P</i>	Significance
Handball jump shoot pretest	0.200	0.05	0.392	0.05
Handball jump shoot posttest	0.156	0.05		

Based on the normality test results, the handball jump shoot pretest data was obtained at 0.200, greater than 0.05, while the handball jump shoot posttest was obtained at 0.156, greater than 0.05, so it can be concluded that the normality test results on the research data are normal. The homogeneity test on the pretest and posttest variables for jump shoot ability in the handball game was obtained at 0.392, greater than 0.05, it can be concluded that the homogeneity test is homogeneous.

Hypothesis Test

Table 5. T-test of handball jump shoot ability

Variable	<i>Mean</i>	<i>t</i>	<i>P</i>	Significance
Handball jump shoot ability (pretest and posttest)	19.75 23.35	5.724	0.000	0.05

Based on hypothesis testing using the t-test, it shows that there is a significant effect of jump to box training to improve jump shooting ability in handball games, with the results obtained being $5.724 >$ from table 2.093, and the value obtained being $0.000 < 0.05$, it can be concluded that there is significant difference. The jump to box exercise is designed to increase the student's jumping strength. This is an important factor in making an effective jump shoot in handball. With increased jumping strength, students can jump higher, evade

opposing defenses, and create better shooting opportunities. This exercise helps students improve their jumping technique. This involves developing correct body position, optimal jumping angles, and improving coordination of body movements. All of this is important to achieve accuracy and stability in jump shooting. As part of this exercise, students learn to properly design and set up their jumps. This helps them understand when to jump and shoot accurately, which is an important element in a successful jump shoot.

The effectiveness of this training can be influenced by various factors such as training frequency, duration, intensity, and how the training is applied in the context of handball training. Scientific research could examine how these exercises affect an athlete's ability to jump shoot. Apart from that, another factor that can be explored is whether this exercise affects shooting accuracy, shooting speed, or reduces fatigue when jumping shooting. This study can also take into account the opinions of players and coaches regarding the experience and benefits of such training in the context of the game of handball. Based on this research, recommendations can be produced regarding the integration of jump to box training in training programs to improve jump shooting ability in handball.

The results of this research can help in the development of more focused and effective training programs to improve jump shooting ability in handball. This can make a significant contribution to athlete training and the development of more sophisticated training strategies. By integrating these aspects in research, a deeper understanding can be created about how jump to box training can influence and improve athletes' ability to jump shoot in the context of handball.

According to Huesmann et al., (2023), the ability to jump well in game situations is key in handball. Jump to box drills help students to play more effectively in developing game situations, such as jumping high in front of the opponent's defense to take a jump shoot. Progress in jump to box training can give students confidence. Increased self-confidence can have a positive impact on their ability to handle the pressure of the game and make better decisions.

According to Host et al., (2023), the effectiveness of jump to box training can be measured through regular evaluation and measurements. This provides concrete data that can be used to see the development of students' jump shoot abilities. Jump to box training should not be the only training method used. Variations in training methods are also needed to develop students' skills holistically. The role of a handball coach or instructor is very important in ensuring that this practice is carried out correctly and effectively. They should provide constructive feedback and appropriate guidance.

The effectiveness of this exercise requires consistency. Students need to commit to undergoing these exercises regularly to see significant results. Jump to box training can be an effective tool in improving students' jump shooting abilities in handball. However, its effectiveness depends on proper implementation, consistency, and support from coaches and related parties. Monitoring and measuring student progress is also an important factor in assessing the effectiveness of the exercises used.

CONCLUSION

Jump to box training is a potentially effective method for improving students' jump shooting abilities in handball. With a focus on developing jumping strength, body coordination, and jumping technique, these exercises can provide some significant benefits. This includes increasing jumping power, leg muscle strength, timing ability, and adaptation to changing game situations. Jump to box training can contribute to increased player confidence, reduced risk of injury, and clear measurement of progress.

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