COMPETITOR:
JURNAL PENDIDIKAN KEPELATIHAN OLAHRAGA
e-ISSN: 2657-0734 & p-ISSN: 2085-5389 ‖ Volume 17, Number 2, 2025 ‖ P.801-810

The Effect of Bounce Ball Drill Training on the Bottom Passing Skills of Volleyball Players Aged 10-12 Years in ASVOBA (Assalam Voli Ball)

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ABSTRACT

This study aims to determine the effect of bouncing ball drill training on the bottom passing skills of volleyball players aged 10-12 years in ASVOBA (Assalam Volley Ball). Underpassing is one of the basic techniques that is very important in the game of volleyball, especially for receiving an opponent's serve or attack. This research uses an experimental design with a control group design model, which involves two groups, namely the experimental group and the control group. Each group consists of 15 players who are selected purposefully. The experimental group was given treatment in the form of bouncing ball drills for several training sessions, while the control group carried out conventional training as usual. The research instrument used a volleyball bottom passing skill test, which was carried out before and after treatment. Data were analysed through normality tests, homogeneity tests, and hypothesis tests using the independent sample t-test to determine differences in results between the two groups. The results of the analysis show that there is a significant increase in bottom passing skills in the experimental group compared to the control group. A significance value (Sig.) of 0.000 (< 0.05) indicates that bouncing ball drill training has a significant influence on improving bottom passing ability. Thus, it can be concluded that the rebound ball drill is effectively used as a training method to develop basic volleyball technical skills in children aged 10–12 years. These findings are recommended for application in volleyball training programs in schools and children's sports clubs as an approach that is fun, focused, and appropriate to students' motor development.

ARTICLE HISTORY
Received: 2025/05/11
Accepted: 2025/05/18
Published: 2025/06/15

KEYWORDS
Bounce Ball;
Drill Training;
Bottom Passing;
Volleyball.

AUTHORS' CONTRIBUTION
A. Conception and design of the study;
B. Acquisition of data;
C. Analysis and interpretation of data;
D. Manuscript preparation;
E. Obtaining funding

Cites this Article : Pamukti, Diah Ayu; Utomo, Andy Widhiya Bayu; Kusuma, Wening Sekar; Septianingrum, Kartika. (2025). The Effect of Bounce Ball Drill Training on the Bottom Passing Skills of Volleyball Players Aged 10-12 Years in ASVOBA (Assalam Voli Ball). **Competitor: Jurnal Pendidikan Kepelatihan Olahraga**. 17(2), p.801-810

INTRODUCTION

Sport is a form of physical activity carried out in a planned and structured manner to improve physical fitness, mental health and motor skills (Rohman et al., 2022). This activity involves certain body movements that can be competitive or recreational

(Nugroho, 2022). Sports have a very broad scope, covering various branches such as athletics, ball games, martial arts, swimming and gymnastics. Each type of sport has certain rules, techniques and goals, whether for entertainment, achievement or health. Sport has an important role in human life, both from health, mental, physical and social aspects. Exercise done regularly can improve body fitness and also the quality of people's lives. Apart from being a means of maintaining health and fitness, sport also has a strong social and cultural dimension. In many countries, sport is part of national identity and a medium for strengthening solidarity between citizens. International sporting events such as the Olympics, the World Cup or the Asian Games are symbols of peace and togetherness between nations. At the local level, sport becomes a forum for social interaction that strengthens relationships between individuals and communities.

According to (Natasya & Suyoko, 2024), psychologically, exercise has been proven to provide great benefits, such as reducing stress, increasing self-confidence, and improving mood. Regular physical activity can stimulate the production of endorphins, which have a positive effect on mental health (Riksandi et al., 2024). Therefore, exercise is an important part of a healthy lifestyle. Children, teenagers, adults and the elderly are advised to actively exercise according to their abilities and physical condition.

Proud sporting achievements can build self-confidence, discipline, togetherness, and inspire future generations. Achievement sports are a form of sports activity carried out in a planned, systematic and sustainable manner with the main aim of achieving the highest achievements in competition (Ulin Nuha Aljamazi et al., 2025). This activity demands optimal physical, technical, tactical and mental abilities from each athlete to be able to compete and achieve victory in competitions, both at regional, national and international levels. According to (Sahabuddin et al., 2020), in performance sports, training is carried out intensively, programmed and guided by professional coaches with the support of a team such as nutritionists, sports psychologists, sports doctors and physiotherapists. Achievement sports do not only rely on natural talent, but also emphasise the importance of a consistent training process, performance evaluation, and tiered coaching from an early age.

Achievement sports have an important role in making the nation's name famous on the world stage. Athletes who win medals or international awards become a symbol of national pride and a source of inspiration for the wider community. Therefore, the government and sports institutions usually provide full support in the form of coaching, training facilities, and awards for outstanding athletes. Apart from that, sports achievements also contribute to the development of the sports industry, starting from organising events, sponsorship, media, to sports tourism.

One of the sports that is popular and loved by various groups is volleyball. Volleyball is a team game played by two teams, each consisting of six players, whose aim is to pass the ball to the opponent's side of the court and try to ensure that the ball does not fall in their area (Rama et al., 2022). This sport requires strong teamwork, coordination, punctuality and agility in movement. Volleyball is one of the branches that is often competed in at national and international events such as the National Sports Week (PON),

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the Asian Games and the Olympics. Many volleyball athletes have succeeded in making the region and the nation proud through their achievements. The process of coaching volleyball athletes is carried out in stages, starting from schools, local clubs, to national training camps.

One of the basic techniques that volleyball players need to master is the ability to pass down. According to (Susanto et al., 2021), Passing is giving the ball to your team, as the first step in developing a strategy to attack your opponent. There are times when volleyball games that use the bottom passing technique are played with one hand because the position of the ball does not allow it to be played with two hands if the ball falls far away from the player's position. This basic technique can be used as a tool to train the gross motor skills of children aged 10 – 12 years.

At the age of 10 -12 years, volleyball players are in a phase of rapid motor development (Kurniawan, 2020). Age 10-12 years is the right time for children to develop their basic skills in various sports, especially volleyball. Even though it is good for honing skills, children often have difficulty carrying out basic passing techniques. This skill requires good hand-eye coordination, the ability to read the direction of the ball, and a quick response to game situations (Ardhi et al., 2022).

Volleyball aged 10-12-year-olds has the aim of finding superior seeds for volleyball players in particular. This requires appropriate training and training methods to develop game skills. In an effort to improve the passing ability of volleyball in children aged 10-12 years, one effective training method used is with the help of a bouncing ball. Bouncing ball is a form of training to improve the accuracy of down passes in volleyball (Ramadhan et al., 2024). The form of training is by first bouncing the ball onto a flat field or using a wall, then passing it down using the wrist. In order to improve bottom passing skills, coaches can provide training methods, drills where students are instructed to carry out repetitive movements. This exercise is not only to improve skills but also to help in developing reaction speed and decision-making.

The ASVOBA (Assalam Volleyball) volleyball team is a volleyball club located in Gentong village, Paron District and is actively held two to three times a week. The team has 52 players ranging in age from 7-12 years. The team aims to develop basic volleyball skills from an early age, with the aim of educating competent and accomplished players in the future. However, based on the evaluation results of the club training that took place at ASVOBA, it was found that the passing skills of the 30 players aged 10 - 12 years were still not optimal. This can be seen from the success rate of passing during sparring, matches and training. Many players are still unable to control the ball well when passing down, so they often lose direction of the ball.

Several factors that influence the less-than-optimal passing skills of volleyball players aged 10 - 12 years at ASVOBA include less varied training methods, limited training time, and a lack of emphasis on correct passing techniques. With a variety of exercises, it is hoped that students will receive optimal coaching and training in order to reduce boredom due to the lack of varied exercises in the training program given at each meeting.

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Limited time during training also influences less than optimal bottom passing. Because if the available time is not used well, then that time will be wasted. Training capacity is carried out 2 – 3 times a week with a deadline of 2 hours of practice. It's not just that there's a lack of emphasis on technique; passing the bottom also makes it difficult for players to defend against opponent attacks. If this technique is not conveyed or practised well, players are likely to make mistakes such as losing control of the ball or failing to return the ball correctly.

Bouncing ball drills can be an effective solution for improving skills in passing under volleyball players at the elementary school level in ASVOBA. Exercise drill: Bouncing balls make players focus more on repeating correct movements, improve ball control, and improve body position when students perform passing. With regular and structured training, players are expected to be able to hone their passing skills significantly.

Previous research conducted by Farid et al. (2021) This research used an experimental method with a Group Pre-Test and Post-Test design on 20 participants. The results of the research showed a significant increase in down passing skills after being given the bouncing ball drill exercise, with an average pre-test score of 48.85 increasing to 52.45 in the post-test, and a significance value of 0.000 < 0.05. This research used an experimental method with a Group Pre-Test and Post-Test design on 20 participants. Further research conducted by Rochi (2023). This classroom action research involved 32 students in class VII A of SMP Negeri 1 Juwangi. The results showed that the average lower passing skill score increased to 82.81 in the second cycle, with classical completion reaching 84.38%.

Based on the problems above, the researcher aims to improve the quality of passing under volleyball at the age of 10-12 years, with that the researchers took the research title "The effect of reflective ball drill training on volleyball players' underpassing skills in ASVOBA (Assalam Voli Ball)".

METHODS

This research method uses a quantitative approach with experimental methods. The research design used is Control Group Pre-Test and Post-Test Design, where the experimental group was given bouncy ball drill training treatment and tested before and after the treatment to determine the changes that occurred. The subjects in this study were students aged 10–12 years who were members of the ASVOBA volleyball club, with a population of 52 players. From this population, a sample of 30 people was taken using purposive sampling techniques, with the criteria that participants were aged between 10 and 12 years and actively participated in club training during the research period. Technique purposive sampling chosen so that the subject under study is truly following the aims and needs of the research.

The instrument used to measure the research results was the volleyball bottom passing skill test. The following is a table of assessment indicators for passing volleyball:

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Table 1.
Volleyball Bottom Passing Assessment Indicator

No	Mark	Category
1	17 - 20	Very good
2	13 - 16	Good
3	9 - 12	Currently
4	5 - 8	Not enough
5	0 - 4	Very less

This research was carried out for three months, namely from January to March 2025. During this period, subjects were given treatment in the form of drill exercises using a bouncing ball with a focus on improving their bottom passing ability. Exercises are carried out in a programmed and systematic manner, designed to train motor coordination, body position, and correct hand contact techniques when making a down pass.

Data collection is carried out through gifts pre-test before treatment and a post-test after treatment. The data obtained was then analysed using the t-test statistical technique to determine significant differences between the results pre-test and post-test. Before carrying out the t-test, prerequisite tests are first carried out, namely the normality test and homogeneity test, to ensure that the data used meets the basic assumptions of parametric analysis. The normality test is used to determine whether the data is normally distributed, while the homogeneity test aims to ensure that the data has a homogeneous variance.

RESULTS AND DISCUSSION

The results of this study present findings from research regarding the effect of rebound ball drill training on down-passing skills in volleyball players aged 10-12 years at ASVOBA. The data obtained is analysed to see changes in skills passing lower. The results of this analysis include descriptive statistics to describe the average bottom passing skill score in the control group and the experimental group. The following are descriptive statistical results.

Table 2.
Descriptive Statistical Analysis of Control Group and Experimental Group

	N	Mean	Median	Mode	Std. Deviasion	Minimum	Maximum
Pretest Control Group	15	12,20	12	10	2,305	9	16
Posttest Control Group	15	12,47	12	11	2,295	9	16
Pretest Experimental Group	15	12,20	12	10	2,484	8	16
Posttest Experimental Group	15	15,47	15	15	2,232	11	19

The table above shows the results of descriptive statistical analysis from the pretest and posttest of the control group and experimental group, each consisting of 15 participants. In the control group, the average (mean) pretest score was 12.20 with a median of 12 and a mode of 10. The minimum score obtained by participants was 9, the maximum was 16, and the standard deviation was 2.305. After treatment, the posttest score increased slightly to an average of 12.47, with the median remaining 12 and the

mode increasing to 11. The standard deviation slightly decreased to 2.295, while the minimum and maximum scores remained at 9 and 16. This shows that the control group experienced a very limited increase in learning outcomes.

In contrast, the experimental group showed a more significant increase in learning outcomes. The average pretest score is 12.20, with a median of 12 and a mode of 10, and a standard deviation of 2.484. The range of scores ranged from 8 to 16. After the treatment was given, the posttest average increased to 15.47, with the same median and mode, namely 15. The minimum score increased to 11 and the maximum to 19, and the standard deviation decreased to 2.232.

Table 3.
Normality Test

Group	P-Value	Significance	Information
Pretest Control Group	0,937	0,344	Normal
Posttest Control Group	0,935	0,319	
Pretest Experimental Group	0,929	0,264	
Posttest Experimental Group	0,966	0,801	

The normality test was carried out to determine whether the data from the control group and experimental group were normally distributed or not. Based on Table 2, it is known that the significance value is greater than the 0.05 significance level, so it can be concluded that the data from the control group and experimental group are normally distributed. Thus, the data has met one of the requirements for parametric statistical analysis, test paired sample t-test.

Table 4.
Homogeneity Test

Levene Statistics	df1	df2	significance	information
0,117	3	56	0,950	Homogeneous

The homogeneity test is carried out to find out whether the data has the same variance or not. Based on Table 3, the value of Levene's statistic of 0.117 with degrees of freedom (df1) = 3 and (df2) = 56. The resulting significance value is 0.950. Because the significance value is greater than 0.05, it can be concluded that the data has a homogeneous variance. In other words, the control and experimental group data come from populations that have the same variance, so they meet the requirements for advanced parametric statistical tests. Paired sample t-test.

Table 5.
Control Group t Test

Paired Differences								
				95% Confidence Interval of the Difference				
	Mean	Std. Dev	Std. Error Mean	Lower	Upper	t	df	Say. (2-tailed)
Pretest-posttest	0,267	0,458	0,118	0,520	0,013	2,256	14	0,041

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Hypothesis testing in the control group pretest and posttest. This research was conducted using a paired sample t-test. Based on Table 4, it is known that the average difference between scores pretest and posttest is 0.267 with a standard deviation of 0.458 and a standard error of 0.118. The calculated t-value obtained was 2.256 with degrees of freedom (df) = 14 and a significance value (Sig. 2-tailed) of 0.041. Because the significance value is smaller than 0.05, it can be concluded that there is a significant difference between the pretest and posttest results in the control group with conventional training.

Table 6.
Experimental Group t-test

	Paired Differences							
				95% Confidence Interval of the Difference				
	Mean	Std. Dev	Std. Error Mean	Lower	Upper	t	df	Say. (2-tailed)
Pretest-posttest	3,267	0,799	0,206	3,709	2,824	15,838	14	0,000

Test the hypothesis in the experimental group pretest and a posttest. This research was conducted using a paired sample t-test. Based on Table 6, it is known that the average difference between scores pretest and posttest is 3.267 with a standard deviation of 0.799 and a standard error of 0.206. The calculated t-value obtained was 15.838 with degrees of freedom (df) = 14 and a significance value (Sig. 2-tailed) of 0.000. Because the significance value is smaller than 0.05, it can be concluded that there is a significant difference between the pretest and posttest results. This means that rebound ball drill training has a significant influence on improving lower passing skills in volleyball players aged 10-12 years at ASVOBA.

Table 7.
Uji Independent Sample t-test

Group	a	Say.	Information
Control Class – Experiment Class	0,05	0,028	Significant

Based on the data in the table above, the results of data analysis show that the significance value obtained is 0.028. This significance value is smaller than the value a namely 0.028 < 0.05, so Ho is rejected and Ha is accepted. Thus, it can be concluded that the results of the rebound ball drill exercise have a significant influence on improving down-passing skills in volleyball players aged 10-12 years at ASVOBA.

Discussion

Based on the results of the descriptive analysis that has been presented, it can be seen that there was an increase in the average value of down passing skills in volleyball players aged 10-12 years after being given treatment in the form of bouncing ball drill training in the experimental group. The average value pretest of 12.20 increased to 15.47 in the posttest. This increase shows the positive influence of the rebound ball drill

training program implemented during the training process. This increase is also supported by the minimum and maximum values, which have changed in a positive direction, from previously 8–16 to 11–19. This shows that almost all research subjects experienced an increase in ability evenly, which is also reflected in the standard deviation value, which is not too large.

Bouncing ball drills are a form of training that emphasises repetition of downward passing movements with the stimulus of the ball bouncing off a wall or other media. This exercise is considered effective in improving basic passing techniques because it can help players control the direction of the ball, improve body position when passing, and improve concentration and reflexes.

The results of the experimental group hypothesis test show that there is a significant difference between the pretest and posttest values. The t-count value of 15.838 is much greater than the t-table of 1.761, and the significance value is 0.000 <0.05. Thus, the null hypothesis (H_0) is rejected and the alternative hypothesis (H_1) accepted. This means that the bouncing ball drill practice has a significant influence on down passing skills.

Previous research conducted by Dea Dwi Anggina et al. (2025) meta-analysis that examines various studies related to the effect of drill training on bottom passing ability in volleyball. The results of the analysis show that drill training consistently provides significant improvements in down-passing skills, making it an effective method in volleyball training. The next research carried out by (Desiva Al Aslamiya & Irsyada, 2024) This research uses an experimental method with a pre-test and post-test design on volleyball extracurricular members. The results show an increase in the average lower passing score for male students from 35.67 to 55.25, and for female students from 45.42 to 55.17. The statistical test shows a significant increase ($p < 0.05$), proving the effectiveness of drill training using wall media in improving bottom passing skills.

Bouncy ball drill training can create active and fun learning, especially for the 10-12-year age group who are at a stage of rapid motor development and body coordination. Children at this age tend to like activities that are dynamic and full of challenges. With drill training, they are invited to actively practice passing techniques directly in situations that resemble actual match conditions, such as receiving ball bounces from various directions. This practical experience allows participants' understanding and skills to develop more optimally compared to learning methods that are passive or only focus on verbal instructions.

Apart from that, the bottom passing skill is one of the basic techniques that is very important in the game of volleyball, because it is the initial movement in a team's attack pattern. With good bottom passing skills, players can receive and control the ball from opponents more accurately, making it easier for teammates to carry out attacks. Therefore, improving this ability through rebound ball drill training is a long-term skill investment for the development of young athletes.

Overall, the results of this study strengthen that the rebound ball drill is a relevant and effective training method to use in basic volleyball technique training, especially down passes. It is hoped that PJOK coaches and teachers can consider using this

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method in training or sports learning sessions at school, so that students get a meaningful learning experience as well as a real increase in technical abilities.

CONCLUSION

Based on the results of the research that has been carried out, it can be concluded that bouncing ball drill training has a significant influence on improving skills passing below in volleyball players aged 10–12 years in ASVOBA. This is evident from the results of descriptive data analysis, which shows an increase in the average score of the skills test results for passing bottom of the experimental group. Apart from that, the results of the prerequisite tests, which include normality and homogeneity tests, show that the data is normally and homogeneously distributed, so hypothesis testing can be carried out using parametric tests. From the results of hypothesis testing using the paired sample t-test, a significance value (sig.) of 0.000, which is smaller than a = 0.05. This shows that there is a significant difference between the pre-test and post-test skills passing bottom after being given treatment in the form of bouncing ball drill training in the experimental group. Thus, the alternative hypothesis (Ha) is accepted and the null hypothesis (Ho) is rejected. Bouncing ball drills have proven to be effective in training response speed, ball direction accuracy, and the stability of players' movements when making down passes. This exercise can also improve hand-eye coordination, as well as motivate players to be more focused and active in training. Overall, this training is very suitable for the 10-12-year age group because it is fun but still emphasises the technical aspects and basic skills of volleyball. With these significant results, the rebound ball drill can be recommended as a routine training method in developing basic down-passing techniques for beginner players in clubs or schools.

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