

The Effect of Target Training on the Shooting Accuracy of Female Futsal Extracurricular Participants at Mulia Senior High School Medan

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Abstract

Objectives: This study aimed to determine the effect of target training on the shooting accuracy of female futsal extracurricular participants at Mulia Senior High School Medan.

Materials and Methods: This study used an experimental method with a one-group pretest-posttest design. The participants were 15 female students who joined the futsal extracurricular program and were selected using purposive sampling. The inclusion criteria were female students who were physically healthy and willing to follow the treatment procedures. The intervention consisted of target training conducted for 16 sessions. Shooting accuracy was measured using a futsal shooting test. The data were analyzed using prerequisite tests and a paired-sample *t*-test at a significance level of 0.05.

Results: The results showed that target training had a significant effect on the shooting accuracy of female futsal extracurricular participants. The calculated *t*-value was 19.13, which was higher than the *t*-table value of 1.76 at $df = 14$. The percentage increase in shooting accuracy after the intervention was 11.4%.

Conclusions: Target training significantly improved the shooting accuracy of female futsal extracurricular participants at Mulia Senior High School Medan. These findings indicate that target-based shooting exercises can be used as an effective training strategy to improve shooting performance in school futsal extracurricular programs.

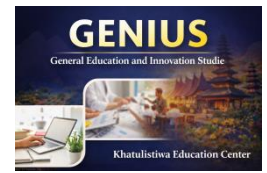
Keywords: Target Training, Shooting Accuracy, Futsal, Female Students, Extracurricular Sports.

Introduction

Futsal is a team sport that requires technical skill, tactical understanding, speed, agility, and accurate decision-making (Ah & S, 2020; Fahey, 2022). The game is played in a relatively small area with a limited number of players, which makes every technical action important. Players are required to perform passing, controlling, dribbling, and shooting effectively under pressure (Irawan et al., 2023; Murtono et al., 2023; Pizarro et al., 2021). Among these basic techniques, shooting plays a central role because it directly determines the opportunity to score goals.

Shooting accuracy is one of the most important technical components in futsal performance (Irawati & Aziz, 2025; Mothna Mohammed, 2016). A player who has good shooting ability can direct the ball toward the target more effectively and increase the team's scoring opportunities. However, shooting is not only related to kicking power. It also requires proper body position, foot placement, ball contact, concentration, timing, and repeated practice. Without structured training, students may find it difficult to shoot accurately, especially during game situations that involve pressure from opponents, limited space, and physical fatigue.

Extracurricular activities in schools provide opportunities for students to develop their talents and interests beyond formal classroom learning (Kuswoyo, 2017; Mashud et al., 2019). Futsal extracurricular programs can help students improve physical fitness, technical skills, cooperation, discipline, and



confidence. At Mulia Senior High School Medan, futsal is one of the most popular extracurricular activities. However, based on initial observations, the shooting accuracy of female futsal participants was still relatively low. Many students were unable to direct the ball accurately toward the goal target, and their shooting technique still needed improvement.

One training method that can be used to improve shooting accuracy is target training. Target training emphasizes repeated shooting practice toward specific goal areas (Bangun et al., n.d.; Kuswoyo, Wasa, et al., 2020). This type of training encourages players to focus on accuracy, concentration, body control, and consistency. Previous studies have shown that target-based exercises can improve shooting performance in futsal players because they train athletes to direct the ball toward specific targets with better precision (Bramasakti, 2016; Buya et al., 2021; Darma et al., 2021). Therefore, this study aimed to determine the effect of target training on the shooting accuracy of female futsal extracurricular participants at Mulia Senior High School Medan.

Materials and Methods

Study Participants.

(Sugiyono, 2012) This study was conducted at Mulia Senior High School Medan in April 2025. The participants were female students who joined the futsal extracurricular program. The population consisted of 15 female futsal extracurricular participants from grades X and XI. The sampling technique used was purposive sampling, with the criteria that the participants were female, physically healthy, and willing to follow all treatment procedures. Based on these criteria, 15 participants were included in the study.

Study Organization.

This study used an experimental method with a one-group pretest-posttest design. The design consisted of an initial test, treatment, and final test. The pretest was conducted to measure the participants' initial shooting accuracy before the intervention. After that, the participants followed a target training program for 16 sessions. The training was conducted three times per week, on Monday, Wednesday, and Saturday.

The target training program focused on improving shooting accuracy through structured shooting exercises directed at specific target areas. The training activities included target shooting, shooting after dribbling, shooting after moving through obstacles, and shooting after receiving a pass. After the treatment was completed, the participants took a posttest using the same shooting accuracy test instrument.

Statistical Analysis.

The data were analyzed using descriptive and inferential statistics. Before hypothesis testing, prerequisite tests were conducted to examine whether the data were normally distributed and homogeneous. The normality test was conducted using the Lilliefors test, while the homogeneity test was used to examine variance similarity. The hypothesis was tested using a paired-sample t-test. The result was considered significant if the calculated t-value was greater than the t-table value at a significance level of 0.05.

Results

The normality test showed that the pretest data were normally distributed. The L-count value was 0.0821, while the L-table value at $\alpha = 0.05$ with $n = 15$ was 0.220. Since the L-count value was lower than the L-table value, the pretest data met the normality assumption.

Table 1. Summary of Normality Test for Pretest Data

Variable	L-count	L-table	Significance Level	Interpretation
Shooting accuracy pretest	0.0821	0.220	0.05	Normal

The hypothesis test showed that there was a significant difference between the pretest and posttest scores. The calculated t-value was 19.13, while the t-table value was 1.76 at $df = 14$ and $\alpha = 0.05$. Since the calculated t-value was higher than the t-table value, the alternative hypothesis was accepted. This means that target training had a significant effect on the shooting accuracy of female futsal extracurricular participants.

Table 2. Summary of Paired-Sample t-Test Results

Variable	df	t-count	t-table	Significance Level	Interpretation
Pretest–posttest shooting accuracy	14	19.13	1.76	0.05	Significant

The results also showed that the percentage increase in shooting accuracy after the target training program was 11.4%. This indicates that the participants' shooting accuracy improved after completing 16 sessions of structured target training.

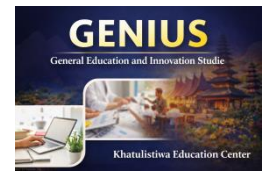
Discussion

The findings of this study showed that target training significantly improved the shooting accuracy of female futsal extracurricular participants at Mulia Senior High School Medan. The improvement of 11.4% indicates that repeated and structured shooting exercises directed at specific targets can help students develop better accuracy and control when performing shooting techniques.

This result is consistent with the principle of motor learning, which emphasizes that skill improvement occurs through repeated practice and experience. Schmidt and Lee (Fizi et al., 2023; Mulya et al., 2025; Solum et al., 2020) (2017) explained that motor learning involves practice-related processes that produce relatively permanent improvements in skilled performance. In this study, the repeated shooting activities allowed participants to correct their movement patterns, improve foot placement, control kicking direction, and strengthen their concentration on the target.

The findings are also in line with Bompaa and Haff (McCormack, 2020; Sánchez-García & Reyes-de-Cózar, 2025), who stated that repeated training is necessary to develop technical mastery and movement automation. Through target training, students were repeatedly exposed to shooting tasks that required precision and consistency. This repetition helped them become more familiar with shooting angles, target direction, and ball contact. As a result, their shooting performance improved after the intervention.

Similar findings were reported by (Huang et al., 2005; Kuswoyo, Lahinda, et al., 2020; Williams & Smith, 2018), who found that target game training improved shooting accuracy among female futsal extracurricular participants. also reported that target training had a positive effect on futsal shooting accuracy because it trained players to focus on specific shooting targets. In addition, (McGill et al., 2014; Riyadi et al., 2025) found that target game exercises contributed to better shooting accuracy among futsal



players. These previous studies support the present findings and strengthen the evidence that target-based exercises are effective for improving futsal shooting performance.

From a practical perspective, target training is suitable for school futsal extracurricular programs because it is simple, structured, and easy to apply. Coaches and physical education teachers can use target-based drills to help students improve shooting accuracy gradually. However, this study was limited by the small sample size and the use of a one-group pretest-posttest design without a control group. Future studies are recommended to involve larger samples, compare target training with other training methods, and include male and female participants from different school levels.

Conclusions

Target training had a significant effect on the shooting accuracy of female futsal extracurricular participants at Mulia Senior High School Medan. The t-test result showed that the calculated t-value was higher than the t-table value, and the participants' shooting accuracy increased by 11.4% after the training program. These findings suggest that target-based shooting exercises can be used as an effective training method to improve futsal shooting accuracy among female students in school extracurricular programs.

Acknowledgment

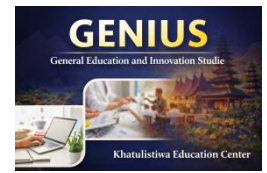
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Conflict of Interest

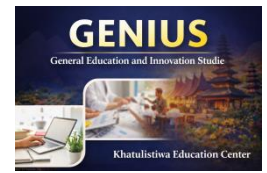
The authors declare no conflict of interest related to this research.

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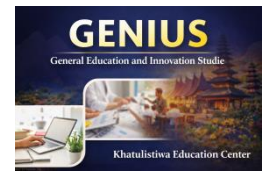
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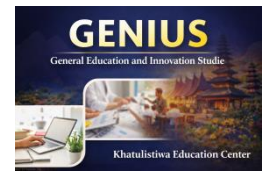
The analysis showed a significant effect of target practice on the shooting accuracy of female futsal extracurricular participants at SMA MULIA MEDAN (11.4%). This improvement in ability occurred due to the association of knowledge acquired in previous sessions with new knowledge, and this association strengthened with repeated practice. This is based on the law of exercise learning theory, which states that the primary principle of learning is repetition; the more frequently a subject is repeated, the more mastered it becomes (Tomprowski & Pesce, 2019: 929).

Bompa & Haff (2019: 19) state that without repeated practice, skills related to technical mastery and stability cannot become automatic. Schmidt & Lee (2017: 375) explain that motor learning is a series of processes related to practice or experience that lead to relatively permanent gains in the ability for skilled performance. Shooting in futsal is the most powerful weapon for scoring goals.

Shooting is the act of kicking a ball toward the goal. This technique seems simple, but it actually requires concentration and precision to produce a goal. Permana (2021: 9) argues that futsal shooting is the most powerful tool for scoring goals. Shooting can be done in various ways, including using the instep, the tip of the foot, and the inside of the foot. However, shooting with the instep is more effective and is often used by players. Players must be able to shoot well and accurately under the pressure of the game, limited time, limited space, physical fatigue, and guarding from opponents. Training is a systematic process of repeated practice, with increasing training load (Harsono, 2017: 48).

Training here must pay attention to and refer to the principles of training. There are many forms of training that can improve goal-kicking skills, one of which is target play. Target play is a classification of game forms that focus on activities that require precision and high accuracy to score. Target play is a game where players score by kicking the ball in a targeted manner and hitting a predetermined target. The fewer hits or attempts to hit the target, the better. Target play requires concentration, composure, focus, and high accuracy. This game actually forms the basis for other games, as almost every game has a target or goal. Target play training consists of several forms of training, including goaling, girshooting, zigzag goaling, and ball shooting. As explained by Buya et al. (2021: 111), as follows: 1. In goaling, there are targets placed at the ends of the goal that are shot using a futsal ball. The distance between the kicker and the target is six meters and ten meters. A ball that is kicked and hits the target earns five points, and no points are awarded if the ball misses the target. It is hoped that from this game, a player can understand new accuracy towards the game material to be studied. 2. At the girshooting (girshooting) training stage, it refers to the actual material. In this exercise, players dribble the ball with the inside of their foot before shooting at the target. Players must dribble the ball for five meters before shooting from a distance of six meters and ten meters from the target. When the ball hits the target, five points are awarded, and zero points if it misses the target. 3. In the zigzag goal game, it is already at the stage of the actual futsal game. Shooting after passing through obstacles. Players are expected to pass through obstacles that have been arranged in a cross (zigzag), and after passing the obstacles, players shoot using the inside of their foot at the targets that have been provided at a distance of six and ten meters. 4. In the game of soccer, shooting is done by receiving a pass and then shooting at the prepared targets.

Conclusions



Based on the results of data analysis, description, testing of research results, and discussion, it can be concluded that there is a significant influence of target training on the shooting accuracy of female futsal extracurricular participants of SMA MULIA MEDAN t count 19.13 and t table 1.76, then the price is consulted with the t table price at a significant level of $\alpha = 0.05$ with $dk = n-1$ ($15-1$) = 14, then this result shows that there is a significant difference. The percentage increase in shooting accuracy of female futsal extracurricular participants of SMA MULIA MEDAN after being given target training is 11.4%.

Acknowledgment

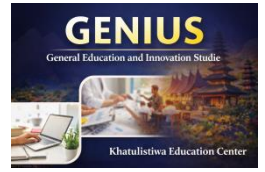
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Conflict of interest

The authors declare no conflict of interest related to this research.

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