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THE EFFECT OF TARGET-GAME TRAINING ON FUTSAL SHOOTING ACCURACY AMONG EXTRACURRICULAR STUDENTS AT SMK YP GAJAH MADA PALEMBANG

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This study aimed to determine the effect of target-game training on futsal shooting accuracy among extracurricular students at SMK YP Gajah Mada Palembang. A quantitative pre-experimental method with a one-group pretest-posttest design was used. The analyzed sample consisted of 23 students who participated in futsal extracurricular activities. Shooting accuracy was measured before and after the intervention using a target-based Bobby Charlton shooting test. The intervention consisted of 16 structured target-game training meetings designed to develop concentration, shooting direction, ball contact control, and target accuracy. Data were analyzed using descriptive statistics, normality and homogeneity tests, and a paired-samples t-test with a significance level of 0.05. The mean shooting accuracy score increased from 82.61 +/- 31.22 in the pretest to 115.65 +/- 37.40 in the posttest. The mean improvement was 33.04 points, equivalent to approximately 40.00%. The paired-samples t-test showed a significant difference between pretest and posttest scores, $t(22) = -3.902$, $p = 0.001$, with a moderate-to-large practical effect ($d_z = 0.81$). Target-game training significantly improved futsal shooting accuracy among extracurricular students. The findings suggest that target-based, game-oriented shooting activities can be used as a practical training strategy to improve accuracy, concentration, and shooting execution in school futsal programs.

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

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INTRODUCTION

Futsal is a fast and dynamic invasion game that requires players to perform technical actions under limited space and time. Compared with outdoor football, futsal is played on a smaller court, involves fewer players, and demands quick transitions between attack and defense. These characteristics make technical efficiency, decision-

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making, coordination, agility, and shooting accuracy important performance indicators. Naser et al. (2017) emphasized that futsal players need intermittent endurance, repeated sprint ability, leg power, and high-level technical skills such as shooting and passing to respond to the intensity of match play.

Shooting is one of the most decisive technical skills in futsal because the final objective of attacking play is to create scoring opportunities. A player who can shoot accurately is more likely to convert tactical situations into goals. However, successful shooting is not determined by kicking power alone. It requires proper body position, balanced supporting-leg placement, correct foot-ball contact, visual focus, concentration, and the ability to direct the ball toward a selected target. In school futsal contexts, students often show enthusiasm for play but still struggle to perform accurate shooting because they rush the movement, lose focus, or rely too much on power without controlling direction.

Initial observations at SMK YP Gajah Mada Palembang indicated that several extracurricular futsal students still experienced difficulty in shooting accurately toward the target. Many shots were weak, missed the goal area, or did not reach the intended scoring zone. These problems suggest that a more specific training method is needed, especially one that combines technical repetition with enjoyable and meaningful practice conditions.

Target-game training is one alternative method for developing shooting accuracy. This type of training requires players to direct the ball toward a specific scoring area, allowing repeated practice of concentration, direction control, visual targeting, and decision-making. Target games also reduce monotony because the practice is arranged in playful and competitive forms. Previous studies have shown that target-based and game-oriented activities can improve futsal shooting accuracy. Anwari et al. (2023), for example, reported that target games improved futsal shooting accuracy more effectively than conventional training among extracurricular participants. Similarly, Prayogo and Widiawati (2024) found a significant increase in shooting accuracy after target-game training, while Sandy et al. (2023) demonstrated that target shooting practice significantly improved futsal shooting accuracy in club players.

Although several studies have investigated target-game or shooting-target training, evidence from school-based extracurricular futsal programs remains important because student characteristics, training frequency, and learning motivation may differ from club athletes. Therefore, this study was conducted to examine the effect of target-game training on futsal shooting accuracy among extracurricular students at SMK YP Gajah Mada Palembang. The hypothesis proposed in this study was that target-game training would significantly improve students' futsal shooting accuracy.

METHOD

Research Design

This study used a quantitative pre-experimental method with a one-group pretest-posttest design. The design was selected because the study aimed to compare students' shooting accuracy before and after receiving the target-game training intervention. The research design consisted of an initial test (O1), treatment using target-game training (X), and a final test (O2).

Participants and Setting

The study was conducted at SMK YP Gajah Mada Palembang, Indonesia, involving students who actively participated in futsal extracurricular activities. Based on the complete statistical output used for inferential analysis, the analyzed sample consisted of 23 students. The participants followed the same testing and intervention procedures. Before the testing sessions, the students received instructions about the shooting test procedure and performed a standardized warm-up to reduce injury risk and to prepare for the shooting task.

Instrument and Measurement Procedure

Shooting accuracy was measured using a target-based Bobby Charlton shooting test adapted from Mielke's football skill measurement procedure. The goal area was divided into several scoring zones. Higher scores were awarded when the ball reached more difficult target zones, while lower scores were given for easier zones. Each participant performed shooting attempts toward the target from a predetermined distance. The total score represented shooting accuracy, with higher scores indicating better performance.

The pretest was administered before the intervention to determine the initial level of shooting accuracy. After the completion of the training program, the same procedure was repeated as the posttest. Testers recorded each participant's score on an observation sheet. The same scoring system, distance, goal target arrangement, and test instructions were used in both testing sessions to maintain measurement consistency.

Target-Game Training Intervention

The intervention consisted of 16 target-game training meetings. Each session was organized into warm-up, core target-game activities, and cool-down. The core activities were designed to improve shooting accuracy through repeated attempts toward specific targets. The target-game activities included shooting toward marked goal areas, shooting after a pass, shooting without excessive ball control, and repeated shooting from predetermined distances.

The training was arranged progressively. In the early phase, students focused on basic shooting posture, supporting-leg placement, foot-ball contact, and shooting direction. In the middle phase, the activities emphasized repeated target shooting, concentration, shooting after a pass, and scoring through modified target zones. In the final phase, students practiced more game-like shooting activities that required

faster decision-making, better timing, and more accurate execution. This sequence was designed to help students improve concentration, movement control, shooting confidence, and the ability to direct the ball toward the intended target.

Data Analysis

The data were analyzed using descriptive and inferential statistics. Descriptive statistics included minimum score, maximum score, mean, standard deviation, and variance. Normality and homogeneity tests were used as preliminary analyses. The effect of the intervention was tested using a paired-samples t-test because the same participants were measured before and after the intervention. The significance level was set at 0.05. The magnitude of the practical effect was estimated using Cohen's d_z , calculated from the mean paired difference divided by the standard deviation of the paired difference.

RESULTS

Descriptive Statistics

The descriptive results showed an increase in futsal shooting accuracy after the target-game training intervention. The pretest mean score was 82.61, while the posttest mean score increased to 115.65. The mean improvement was 33.04 points, equivalent to approximately 40.00% relative to the pretest score. The descriptive statistics are presented in Table 1.

Table 1.
Descriptive statistics of futsal shooting accuracy

Test	N	Minimum	Maximum	Mean	Std. Deviation	Variance
Pretest	23	30	150	82.61	31.220	974.704
Posttest	23	60	200	115.65	37.395	1398.419

Assumption Testing

The paired-samples t-test showed a statistically significant difference between pretest and posttest shooting accuracy scores. The mean paired difference for pretest minus posttest was -33.043, indicating that the posttest scores were higher than the pretest scores. The 95% confidence interval of the difference ranged from -50.606 to -15.481. The t-test result was significant, $t(22) = -3.902$, $p = 0.001$. The effect size was $d_z = 0.81$, indicating a moderate-to-large practical effect. The hypothesis that target-game training significantly improves futsal shooting accuracy was therefore accepted.

Table 2.
Paired-samples t-test result

Comparison	Mean Difference	SD Difference	SE Difference	95% CI Lower	95% CI Upper	t(df)	Sig.
Pretest - Posttest	-33.043	40.613	8.468	-50.606	-15.481	-3.902 (22)	0.001

DISCUSSION

The findings demonstrate that target-game training produced a significant improvement in futsal shooting accuracy among extracurricular students at SMK YP Gajah Mada Palembang. The increase from 82.61 to 115.65 points indicates that students became more capable of directing the ball toward scoring zones after completing the intervention. This improvement is meaningful because shooting accuracy is a decisive technical component in futsal, where quick transitions, limited space, and short decision time require players to execute goal attempts efficiently.

The improvement may be explained by several mechanisms. First, target-game training provides clear external goals for each shooting attempt. When students repeatedly direct the ball toward specific targets, they learn to regulate force, foot-ball contact, body balance, and visual focus. Second, the game-like structure increases motivation and reduces boredom compared with conventional repetitive shooting practice. Third, target games require players to combine technical execution with concentration and decision-making, which are important for converting shooting opportunities into goals.

These findings are consistent with previous studies on futsal shooting accuracy. Anwari et al. (2023) found that target-game training improved shooting accuracy in futsal extracurricular participants and produced better results than conventional training. Prayogo and Widiawati (2024) also reported a significant effect of target games on futsal shooting accuracy, showing that repeated target-based practice helps participants focus on shooting direction rather than relying only on power. The present findings are also supported by Sandy et al. (2023), who found that target shooting practice significantly increased shooting accuracy among futsal club players.

The present results are further aligned with Hidayat et al. (2025), who reported that both tactical approaches and drilling methods significantly improved shooting ability among futsal extracurricular participants. Although their study used a different comparison design, their findings support the idea that structured practice can strengthen shooting skill acquisition. In addition, Hasan and Bismar (2025) showed that physical conditioning related to lower-limb power can improve futsal shooting accuracy, suggesting that accurate shooting is influenced not only by technical repetition but also by the ability to generate stable and controlled force. This means that target-game training may be even more effective when combined with supporting physical exercises such as balance, leg power, and coordination drills.

The role of technical skill in futsal performance is also supported by broader futsal research. Naser et al. (2017) explained that futsal requires high-intensity physical capacities together with technical abilities such as shooting and passing. Mohammed et al. (2014) showed that physical and technical demands differ according to expertise level, indicating that better futsal performance is associated with more efficient execution of technical actions. Therefore, the improvement observed in this

study can be interpreted as a positive adaptation to a training program that repeatedly placed students in accuracy-oriented shooting situations.

From a practical perspective, target-game training is suitable for school extracurricular programs because it is simple, inexpensive, and easy to modify. Teachers or coaches can adjust target size, shooting distance, scoring zones, number of attempts, and game rules according to students' ability levels. This flexibility is important because students may have different levels of confidence, concentration, strength, and technical skill. In this study, the improvement after 16 meetings suggests that target-game training can be integrated into regular futsal practice to improve shooting accuracy in a systematic yet enjoyable way.

However, this study has several limitations. The design used only one group without a control group, so the improvement cannot be compared with students who did not receive target-game training. The sample was limited to one school, which may reduce generalizability. In addition, the study focused only on shooting accuracy and did not measure other performance factors such as ball speed, decision-making during match play, psychological confidence, or long-term skill retention. Future studies should involve a larger sample, include a comparison group, and examine whether improvements in shooting-test scores transfer to real match performance.

CONCLUSION

Target-game training significantly improved futsal shooting accuracy among extracurricular students at SMK YP Gajah Mada Palembang. The posttest mean score was higher than the pretest mean score, and the paired-samples t-test confirmed a significant difference. These findings indicate that structured target-game activities can be used as an effective method to train shooting accuracy because they combine repetition, concentration, technical control, and enjoyable learning conditions. Coaches and physical education teachers are encouraged to apply target-based shooting games as part of regular futsal training programs, while future research should use a stronger experimental design with a control group and broader performance indicators.

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CONFLICT OF INTEREST

The author declares no conflict of interest.

DATA AVAILABILITY STATEMENT

The data used in this study are available from the author upon reasonable request.

REFERENCES

- Amani-Shalamzari, S., Khoshghadam, E., Doniaee, A., Parnow, A., Bayati, M., & Clemente, F. M. (2019). Generic vs. small-sided game training in futsal: Effects on aerobic capacity, anaerobic power and agility. *Physiology & Behavior*, 204, 347-354. <https://doi.org/10.1016/j.physbeh.2019.03.017>
- Anwari, N. S., Maulana, F., & Septiadi, F. (2023). Akurasi shooting futsal: Permainan target versus permainan konvensional di ekstrakurikuler futsal. *Jurnal Educatio FKIP UNMA*, 9(1), 217-222. <https://doi.org/10.31949/educatio.v9i1.4409>
- Doewes, R. I., Elumalai, G., & Azmi, S. H. (2022). Futsal Shooting Moving Ball Test (FSMT) assessment as a new testing protocol. *International Journal of Human Movement and Sports Sciences*, 10(6), 1302-1310. <https://doi.org/10.13189/saj.2022.100621>
- Firmansyah, D. D., Sudrazat, A., & Fauzi, R. A. (2026). Efforts to improve shooting accuracy in futsal games through structured training at UKM Futsal UPI Sumedang. *Journal Coaching Education Sports*. <https://doi.org/10.31599/yky6xv47>
- Hasan, M. S., & Bismar, A. R. (2025). The effect of half squat jump exercises on shooting accuracy in futsal players in SMA Negeri 8 Makassar. *COMPETITOR: Jurnal Pendidikan Kepelatihan Olahraga*, 17(1), 391-401. <https://doi.org/10.26858/cpjok.v17i1.206>
- Hidayat J, T., Hudain, M. A., Hasan, M. S., Kasmad, M. R., & Jamaluddin, J. (2025). Tactical approach with drilling method on shooting ability of futsal extracurricular participants in elementary schools. *ETDC: Indonesian Journal of Research and Educational Review*, 4(3), 920-931. <https://doi.org/10.51574/ijrer.v4i3.3410>
- Mielke, D. (2007). *Dasar-dasar sepak bola*. Pakar Raya.
- Mohammed, A., Shafizadeh, M., & Platt, G. K. (2014). Effects of the level of expertise on the physical and technical demands in futsal. *International Journal of Performance Analysis in Sport*, 14(2), 473-481. <https://doi.org/10.1080/24748668.2014.11868736>
- Naser, N., Ali, A., & Macadam, P. (2017). Physical and physiological demands of futsal. *Journal of Exercise Science & Fitness*, 15(2), 76-80. <https://doi.org/10.1016/j.jesf.2017.09.001>
- Nopiyanto, Y. E., Kardi, I. S., Wibowo, C., Fajar, M. M., Utama, E. P. J., Agus, H., & Novriansyah. (2026). The effect of small-sided games as a contextual training method on shooting accuracy and physical activity enjoyment in futsal extracurricular participants. *Sportske Nauke i Zdravlje*, 16(1). <https://doi.org/10.7251/SSH2601146N>
- Prayogo, T., & Widiawati, P. (2024). The influence of target games on shooting

accuracy for futsal extracurricular participants of SMP Negeri 1 Plaosan. Indonesian Journal of Sport Management, 4(3).
<https://doi.org/10.31949/ijsm.v4i3.10858>

Sandy, R. A., Adi, S., Andina, O., & Abdullah, A. (2023). Pengaruh latihan shooting target terhadap peningkatan ketepatan shooting pemain futsal Klub Wakanda FC Malang. Sport Science and Health, 5(8), 834-839.
<https://doi.org/10.17977/um062v5i82023p834-839>