

# The use of tennis racket media among SEA Games athletes in Cambodia: How does it affect receiving sepak takraw?

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## ABSTRACT

**Background Problems:** Receiving the first ball is a problem for national sepak takraw athletes at the 2023 Cambodia Sea Games, where the reception technique is in the bad category. **Research Objectives:** This study aims to determine the effect of using tennis racket media on SEA Games athletes in Cambodia on improving sepak takraw reception skills. **Methods:** This study used quantitative methods with a one-group pretest and posttest. Random sampling was used to select Cambodian SEA Games sepak takraw athletes as research subjects. The population in this study were men's sepak takraw athletes from the 2023 Cambodia Sea Games national training, with the sample used totaling 12 athletes taken randomly. **Findings and Results:** The results showed that the use of tennis racket media had a significant effect on increasing acceptance of sepak takraw games. Athletes who follow the training programme with tennis racket media experience a consistent increase in their ability to receive the ball. **Conclusion:** These results indicate that the use of this additional training tool can be an effective strategy for improving the performance of sepak takraw athletes. The study makes some significant contributions to understanding the use of racket media in the training of sepak takraw athletes. Further research and wider experimentation can help deepen the understanding of the potential use of tennis racket media in sports training.

**Keywords:** Tennis racket media; SEA games; sepak takraw; athletes



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## INTRODUCTION

Sepak takraw is a sport that originated in Southeast Asia including Indonesia, Malaysia, and Thailand, as well as Singapore, the Philippines, and Laos (Lim, 2023). The achievement of sepak takraw has only begun in international matches in the past few decades (Zarei & Ramkissoon, 2020). The way of playing is also quite

captivating, players make acrobatic movements when attacking (Putra & Fuaddi, 2019; Anita et al., 2022). Sepak takraw is played by two teams with a net as a barrier between them. The sport of sepak takraw is done without involving the hands in hitting the ball and is not even allowed to touch the arms. The ball is simply touched or played with the feet, chest, shoulders and head (Purwanto, 2022). Unbeknownst to many, sepak takraw has the benefit of improving physical fitness through the physical activities performed (Aji & Yudhistira, 2023; Suryadi et al., 2023a; Suryadi et al., 2024), and serves as a platform to achieve excellence (Athaya et al., 2023; Rubiyatno et al., 2023; Suryadi, 2022; Suryadi et al., 2023b; Suryadi & Rubiyatno, 2022). Engaging in physical activity can have positive effects on physiological health (Eigenschenk et al., 2019; Hardinata et al., 2023; Malm et al., 2019; Mashud et al., 2024).

In playing sepak takraw, there are several fundamental techniques that a player needs to master, one of which is the first ball, also known as the receive (Hanafi, 2020). The receive is a technique used to defend against the opponent's attack and serves as the initial movement for a counterattack (Ramadhan & Bulqini, 2018). Mastery of the "receive" is crucial for players, as it is used when receiving the ball from the opponent (Hanafi, 2020). If a player cannot receive and play the ball effectively, the game cannot proceed. Proficiency in the "receive" minimizes failures during the match (Ramadhan & Bulqini, 2018). Failures in the first ball or receive are often influenced by various factors such as physical abilities, including balance, eye-foot coordination, and leg strength (Nur, 2018). According to Murti et al. (2021) balance and leg muscle strength significantly contribute because having good balance allows for better ball control, and strong leg muscles act as support and help stabilize balance when performing single-legged movements. Additionally, eye-foot coordination needs to be mastered by sepak takraw players in controlling and playing the ball after receiving it from the opponent (Jufrianis et al., 2021).

Therefore, there is a need to improve "receive" techniques by conducting coordination and skills training (Hidayat et al., 2020). In the research conducted by Muhyi et al. (2021) the game of krawnjang can improve the skills of sepak sila in sepak takraw, thus affecting the improvement of receive techniques for players. Therefore, krawnjang games can be applied to enhance the fundamental techniques of sepak takraw. Additionally, partner training can significantly contribute to skill enhancement for sepak takraw players (Agussalim et al., 2023). Providing coordination training in sepak takraw can enhance the first-ball reception skills. As outlined by Bais et al. (2023), proficiency in sepak takraw relies on factors such as flexibility and eye-foot coordination, which are integral to its foundational skills. They emphasize the crucial role of eye-foot coordination and balance in effectively executing serves in sepak takraw (Ramli et al., 2023). Similarly, Abdiliah et al. (2022) elaborate on how employing intensive and extensive interval training techniques alongside enhancing eye-foot coordination can enhance one's ability to execute powerful smashes in the sport.

**Table 1. Initial Data of Receiving Athletes for the Cambodia Sea Games 2023**

No	Athlete Name	Type	Number of Treatments										Max Score	Category
			1	2	3	4	5	6	7	8	9	10		
1	Saeful R	Receive	1	0	0	3	0	3	3	0	0	0	10	Medium
2	Jeky L	Receive	0	0	0	0	1	0	1	0	0	1	3	Poor
3	Mandeg	Receive	2	0	1	2	0	1	1	0	1	0	8	Medium
4	Rusdi	Receive	0	1	1	1	1	0	1	1	2	1	9	Medium
5	Diki A	Receive	3	1	1	0	1	1	2	1	2	0	14	Medium
6	Abdul M	Receive	0	3	2	3	3	2	0	1	0	0	11	Medium
7	M. Hardi	Receive	1	0	0	0	0	0	0	1	0	2	4	Poor
8	Andi Tri	Receive	3	0	1	0	0	0	2	0	3	0	9	Medium
9	Anwar B	Receive	1	0	0	0	0	0	0	0	0	0	1	Poor
10	Jimy K	Receive	0	3	0	0	0	0	0	0	1	0	4	Poor
11	M. Hafiz	Receive	0	2	1	0	0	1	3	0	0	0	7	Poor
12	Laude M	Receive	0	0	4	1	0	1	0	0	0	0	5	Poor

Based on the initial data presented in Table 1, it is evident that half of the national athletes participating in the Sea Games Cambodia 2023 exhibit subpar performance in their first-ball reception, particularly during services or smashes. Additionally, their endurance in the "receive" category is also deemed inadequate during

gameplay. However, proficiency in receiving serves is crucial in sepak takraw (Hanafi, 2020; Ramadhan & Bulqini, 2018). Previous studies have explored methods such as the passing technique to improve receiving skills (Hanafi, 2020), as well as training models and flexibility to enhance service performance (Said & Syam, 2022). Consequently, advancements in sports technology have led to the development of various training equipment (Aziz et al., 2023; Aziz et al., 2023b; Umar et al., 2023; Yogi et al., 2023), including tennis rackets with distinct features that hold promise for enhancing athletes' skill development. Tennis rackets, with different designs and materials compared to traditional sepak takraw rackets, offer new variations and challenges in training, and this can be a solution to improve technique and enhance athletes' skills.

However, despite its positive potential, the application of tennis racket media in the context of sepak takraw is still relatively new, and not many studies have specifically explored its impact (Nurdin & Subakti, 2023), especially on athletes who will compete in the SEA Games in Cambodia. In addition, the use of a modified training model provides novelty regarding training technology, and the use of different samples also makes this one of the significant gaps that this study aims to address. Hence, the primary objective of this research is to explore the potential impact of utilizing tennis racket equipment on key facets of sepak takraw training, particularly focusing on the reception of the first ball or the reception proficiency of national sepak takraw players. This prompts the inquiry into how the incorporation of tennis racket equipment may influence the pivotal components of sepak takraw training, specifically the players' ability to receive the initial ball effectively.

## METHOD

This study used a quantitative approach with the research design used is a one-group pretest-posttest design. The population in this study were men's sepak takraw athletes at the 2023 Cambodia Sea Games national training. The population in this study were men's sepak takraw athletes at the 2023 Cambodia Sea Games national training. The research sample is the 2023 Cambodia Sea Games men's sepak takraw national training athletes totaling 12 athletes who are taken randomly or randomly. In this study using a standardized test procedure in the form of numbers and a proven test of the skill of receiving the first ball or receiving in the sepak takraw game, which was compiled by researchers with validity = 0.547 and reliability = 0, 690 (Hanafi et al., 2016). The receive skill test aims to measure the skill of receiving the ball. The equipment needed was 10 takraw balls, tennis rackets, a scorekeeper and a batter. The implementation procedure was as follows: (1) The implementation was that each player receives the ball 10 times. (2) Each player was free to receive 10 balls using sila, memaha, and head soccer techniques. (3) Balls that fell or could not be received was not counted. (4) Acceptance of the ball that counts was above head height and could be reached. (5) Scoring a goal.

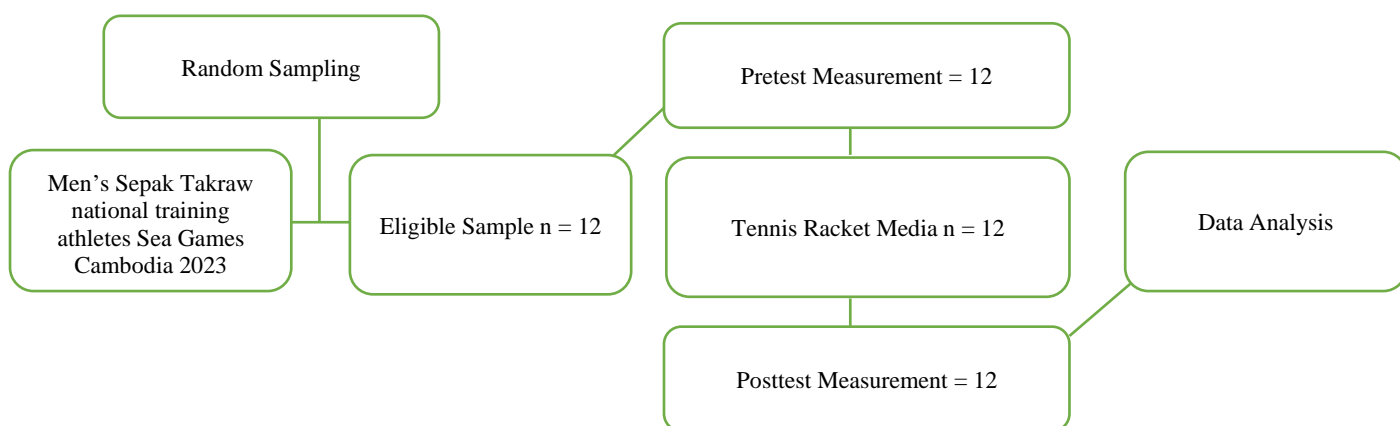


Figure 1. Research Procedure Chart

The score obtained from whether or not the receiver rises, if the rise is good then the score is 3, while if the rise is wild then the score is 1, and if you cannot receive the ball then the score is 0. The following Table 2 displays the reference score for the sepak takraw skill test for the receive technique. Furthermore, the data that

has been obtained is tested using the SPSS version 26 application through the prerequisite test and hypothesis testing stages.

**Table 2. Skill Test Reference Values**

No	Norm	Receive
1	Excellent	> 30
2	Good	21-15
3	Medium	14-8
4	Poor	0-/

## RESULTS AND DISCUSSION

The results illustrate that media training using tennis rackets provides an increase in the results of receiving men's sepak takraw athletes at the 2023 Cambodia Sea Games. Then, the discussion was explained about training using a tennis racket on the 2023 Cambodia Sea Games men's sepak takraw athletes who did the pretest and posttest in sampling. The results of the initial test conducted on 12 athletes, there were 6 athletes in the moderate category, 6 athletes in the less category, and the average in the overall test results with a score of 7 in the less category. Can be seen in Table 3.

**Table 3. Results of Pretest Data Received by 2023 National Training Athletes**

		Category Pretest			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	0	0,0	0,0	0,0
	Good	0	0,0	0,0	0,0
	Moderate	6	50,0	50,0	50,0
	Poor	6	50,0	50,0	100,0
	Total	12	100,0	100,0	

From the initial test results, it shows the ability to receive men's sepak takraw athletes at the 2023 Cambodia Sea Games in the deficient category. With the existing results, the coach has extra work in improving the athlete's receiving ability so that the game is better and the target at the Cambodia Sea Games is well realized. Therefore, the coach uses tennis racket media in improving the athlete's receiving ability. The posttest results show that there is a significant increase from the entire sample showing 6 athletes who have a very good category, 5 athletes who have a good category, and 1 athlete who has a sufficient category. In addition, the average result in the posttest shows a value of 20 which means that the Cambodia Sea Games sepak takraw athletes have a good receive. Can be seen in the following image table.

The treatment given by the count coach starting from October 7 to the posttest on November 16, 2022 showed a significant increase so that athletes easily raise the first receive or ball. From the results of the pretest and posttest, the researcher continued the calculation using SPSS to show the results of the research. The average pretest is 07.833 while the posttest is 20.833 after being given treatment for one month which is read as the mean with a population of 12 male athletes Sea Games Cambodia 2023.

**Table 4. Results of Posttest Receive Data for National Training Athletes 2023**

		Category Posttest			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	6	50,0	50,0	50,0
	Good	5	41,7	41,7	91,7
	Moderate	1	8,3	8,3	100,0
	Poor	0	0,0	0,0	0,0
	Total	12	100,0	100,0	

The treatment given by the count coach starting from October 7 to the posttest on November 16, 2022 showed a significant increase so that athletes easily raise the first receive or ball. From the results of the pretest and posttest, the researcher continued the calculation using SPSS to show the results of the research. The

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**Table 5. Normality Test Results**

	Tests of Normality					
	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pretest Data	.126	12	.200*	.977	12	.966
Posttest Data	.195	12	.200*	.828	12	.220

\*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Based on the results of the normality test using shapiro-wilk, the significance value of the pretest and posttest data shows ( $p > 0.05$ ), these results provide information that the data shows a normal distribution so that it can be continued using the paired sample t test. The results can be seen in Table 5.

**Table 6. Paired Sample t Test Results**

	Results	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Pretest - Posttest	-17,842	-9,658	-7,396	11	0,000

The data shows that the results of the pretest and posttest have a difference or influence. The results show the sig value. (2 tailed) of  $0.000 < 0.05$ , so training using tennis racket media can improve (receive) in the 2023 Cambodia Sea Games sepak takraw athletes. When viewed from the reception of the first ball or ball reception at the 2023 Cambodia Sea Games sepak takraw athletes using tennis racket media experienced a significant increase. So, it can be concluded based on the existing data, it turns out that the 5%  $t_{table}$  price is 2.048. Thus  $t_{count} > t_{table}$  ( $7.396 > 2.048$ ). Results can be seen in Table 6.

This study aims to prove the effect of tennis racket media on increasing the acceptance of the receive serve or the first ball in the game of sepak takraw. The results showed that the tennis racket media training method was very effective for sepak takraw athletes to master the first ball. The first ball training method using a throw is very good to see when in the field receiving hard or slow attack balls. Previous research has found that receiving in sepak takraw games can be improved by using the passing method with a wall (Hanafi, 2020). Other research applying training models and flexibility provides a positive increase in the ability to serve sepak takraw (Said & Syam, 2022).

This study delves into the effects of incorporating tennis racquet media into sepak takraw training for SEA Games athletes in Cambodia, shedding light on innovative possibilities with alternative training equipment. The findings highlight significant aspects such as alterations in stroke technique, athlete adaptability, and strategic considerations impacting sepak takraw performance. Similar to Muhyi et al. (2021), which demonstrated the efficacy of a designed kwanjang sepak game in enhancing sepak sila skills, and other studies employing video tutorial-based learning (Semarayasa et al., 2023).

Subsequent research found a significant interaction between static, dynamic, and limb length targets (long and short) on the accuracy of horse serves in male sepak takraw players (Marpaung et al., 2022). The sepak takraw first ball training method is very important in the game of sepak takraw, especially in mastering the first ball (Maseleno & Hasan, 2012). As an asset in developing mastery of receiving the first ball in the game of sepak takraw with good training, one of which is the practice of sepak sila, sepak kura, thigh, and head (Hasanuddin et al., 2015). With the training method, the basic techniques of sepak takraw can be explained as follows: Sepak sila is very effective in receiving flat hard ball attacks, Sepak kura to take foles or slow, thighs to receive smash balls hard, the head is very effective for taking hard balls.

Each form of variation or specific training method has different effectiveness towards the desired goal. Sepak takraw players perform the technique of receiving the first ball repeatedly until the technique of receiving the first ball is correct (Hanafi, 2020). The training method using this racket tends to be mastered with a gradual training method using a racket but the intensity of the training is always fixed, the training

method using a racket can develop the reception of the first ball. If a player's defense (receive) is good, it tends to win the game.

In order to provide practical recommendations, this study encourages coaches and sports experts to consider the integration of tennis racket media in sepak takraw training programs. The use of this media can be directed towards improving stroke technique, accelerating the athlete's adaptation process, and developing more sophisticated game strategies. Nevertheless, it should be noted that this study has certain limitations, such as a limited sample size and focus on a specific context.

## CONCLUSION

Achievement in sports competitions such as the SEA Games requires careful preparation and intensive training. In the context of sepak takraw, the skill of receiving or receiving the ball plays an important role in determining the outcome of a match. The results showed that the use of tennis racket media had a significant effect on increasing acceptance in sepak takraw games. The average posttest results show a value greater than the pretest average. Athletes who follow the training program with tennis racket media experience a consistent increase in the ability to receive the ball. These results indicate that the use of this additional training tool can be an effective strategy in improving the performance of sepak takraw athletes. The utilization of tennis racket media as an additional training tool opens the door for innovation and experimentation in training methods. In addition, the motion models provided also vary and provide a new motion automation. This emphasizes the importance of creative thinking in an effort to improve athletes' abilities. These conclusions suggest that the use of tennis racket media in training Cambodian SEA Games sepak takraw athletes could be an effective strategy to improve ball reception. Although this study provides promising results, it should be noted that its effectiveness may vary depending on other factors, such as the duration of practice and the athletes' initial skill level. Therefore, further research and wider experimentation can help deepen the understanding of the potential use of tennis racket media in sports training as well as variations in performing movements are needed.

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## CONFLICT OF INTEREST

Not conflicts of interest related.

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