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The Effect of Imagery Training on Improving Table Tennis Forehand Drive Skills

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Abstract

Research on table tennis specifically for junior athletes has several important objectives related to the training and development of young athletes. One of the main objectives is to improve basic technical skills, such as forehand drives, backhand drives, serves, and footwork, which are the foundation of table tennis. Furthermore, this study aims to determine the extent to which table tennis training can help develop motor coordination, agility, and reaction speed in junior athletes who are experiencing rapid growth. Another goal is to develop an engaging and enjoyable training model to foster motivation and a strong interest in training in young athletes. The research method used in this study is the experimental method. This method is used based on the consideration that the nature of experimental research is to try something to determine the effect or effect of a treatment. The subjects of the study were 15 junior table tennis athletes of PTMSI Pekanbaru City. The results showed a significant effect of Imagery Training on improving table tennis forehand drive stroke skills. It can be concluded that the implementation of the Imagery Training program resulted in substantial and significant improvements in the subjects' ability to execute accurate and consistent forehand drive strokes.

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INTRODUCTION

Table tennis is a sport that combines elements of dexterity, speed, and strategy. This game is played on a special table divided in two by a net, with the aim of hitting the ball towards the opponent so that the opponent is unable to return it according to the rules. (Rodhi, 2023). Emphasizes that table tennis is not only about hitting the ball, but also how the player is able to control the rhythm of the game to score points. This shows the importance of mastering basic techniques and accuracy in reflexes (Firmansyah, 2019). Provides a more fundamental view, that table tennis is a game of hitting a small ball with the aim of preventing the opponent from returning it. This definition reflects the competitive essence of the game. Meanwhile, (Nelistya, 2011). Emphasizes that table tennis is played on a table, with the ball being hit over the net and having to bounce on the opponent's side of the table. This explanation reinforces that table tennis relies heavily on the rules of space (table dimensions) and ball control.

According to (Yulianto, 2015) table tennis is a game where players understand and practice the techniques of playing table tennis itself. Strokes in table tennis are basically only divided into two groups, namely, forehand strokes and backhand strokes (Atmaja & Tomoliyus, 2015). However these strokes can be varied with certain techniques (Parekh, 2017), to achieve better drive or stroke results or ones that contain spin that is difficult for the opponent to predict (Syahruddin, 2021)

Every table tennis player always wants their forehand and backhand shots to be hard and fast (Sudrajat et al., 2023). So that their opponent is overwhelmed in anticipating them (Hakim, 2020). The weaknesses that table tennis players often experience are shots that are too weak, not hitting the ball quickly enough, and returns that are not hard enough, making it easier for the opponent to control the game (Rahmadianti et al., n.d.).

The forehand drive is one of the most important basic stroke techniques in table tennis. this stroke is performed by swinging the racket from the dominant side of the body forward to hit the incoming ball. the goal of the forehand drive is to produce a fast and flat stroke, making it difficult for the opponent to return the ball (Wafa & Pratama, n.d.).

Research on table tennis focused on junior athletes has several important objectives related to the coaching and development of young athletes. One

primary objective is to improve basic technical skills, such as forehand drives, backhand drives, serves, and footwork, which are the foundation of table tennis. Through this research, coaches and educators can evaluate the effectiveness of the training methods used and find approaches that are more suited to the learnin g characteristics of children and adolescents. Furthermore, this study aims to determine the extent to which table tennis training can support the development of motor coordination, agility, and reaction speed in junior athletes who are experiencing rapid growth. Another objective is to develop an engaging and enjoyable training model to foster motivation and a strong interest in training in young athletes. The results of this study are expected to serve as a foundation for designing a systematic and sustainable long-term coaching program, thereby producing high-achieving table tennis athletes in the future.

There are various types of psychological training that can be used by coaches and athletes to improve basic technical skills, one of which is imagery training (Komarudin, 2013). Imagery training is a training process that can be done by athletes by imagining sports movements and displaying them in their minds without any external stimulation (Nopiyanto et al., 2022).

Imagery is one of the methods used in mental training, defined as a form of mental creation that is done consciously and deliberately and aims to form a perception of something by forming it in someone's mind (Amini, A., Salehi, M., & Avazpour, 2022). As is known, imagery training can increase peak performance (Gould, D., Voelker, D. K., Damarjian, N., & Greenleaf, 2014). Imagery relies heavily on experiences stored in memory, and has been experienced internally by reconstructing external events in their minds

To improve athlete performance, consciously shaping or repeating experiences, also known as imagery training, is essential. Furthermore, imagery training is an integral part of overall mental skills. When athletes clearly imagine or visualize themselves while training, they can imagine themselves performing flawlessly.

METHODS

This type of research is a quasi-experimental study with a one-group pre-test-post-test design. Before the treatment was carried out, this study began with a pre-test. This pre-test aims to obtain initial data on the forehand stroke skills of

table tennis players. After the pre-test, treatment was given in the form of training using imagery. In this study, the population was all 15 junior table tennis athletes from PTMSI Pekanbaru City. The sample is a portion of the population that is the actual source of data in a study. The sample was used due to limited time, costs, and energy to research the entire population (Amin, N. F., Garancang, S., 2023).

Sampling Procedures

The sampling technique used was total sampling, where the entire population was sampled. The instrument used to measure forehand drive skills in table tennis was the backboard test. Data analysis used a t-test to determine the effect of the treatment given to the research subjects on their forehand drive skills in table tennis.

Materials and Apparatus

The instrument used to measure table tennis forehand drive is the backboard test. The following instruments and norms are given below: Execution: The testee stands behind or on the horizontal side of the table, with a stake and a ball in hand. On the command "yes," the testee drops the ball on the table and hits the table perpendicular to the horizontal side. If the testee cannot control the ball, they can take the ball from the box, then drop it on the table and continue bouncing the ball as much as possible. An assistant takes the ball from the testee's control and puts it back into the box. Scoring method: The ball is hit during a rally lasting 30 seconds and hits a predetermined target. The highest score for each 30-second rally is scored. Officials: One person measures the time using a stopwatch and gives the commands "yes" and "stop." One person observes the frequency of the ball hits, and one person records it. Lack of an assistant to pick up the ball that the testee cannot control (Sari & Antoni, 2020).

A bounce is declared invalid if:

1) The ball is volleyed. 2) The testee presses with their free hand on the table when striking the ball. 3) The ball hits a vertical part of the table below the line. 4) Serves at the start of the test. 5) Hits the ball after it has bounced more than once on a horizontal table. 6) Hits the ball more than once with their feet resting on the side of the table. Scoring: The tester stands near the table and counts the number of valid hits for 30 seconds and records them. The testee is allowed to take the test three times, with a 10-second break between

each. The score for each rally is the number of valid bounces within 30 seconds. The test score is the highest total of the three rallies.

To find out whether there is a difference between the pre-test and post-test results for the experimental group that has been carried out, the pre-test and post-test data are processed using the following steps: The data analysis technique uses the t-test to determine the effect of the treatment given to the research subjects on the ability of forehand strokes in table tennis.

RESULT

This study used a one-group pretest-posttest design with a sample of 15 table tennis players. The effect of imagery training was measured by comparing forehand drive skill scores before (pretest) and after (posttest) the treatment.

Table 1. Forehand Drive Skill Data Description

Subject (Player)		Pre-test Score	Post-test Score	Improvement
1	35	42	7	
2	38	45	7	
3	41	50	9	
4	33	40	7	
5	40	48	8	
6	36	44	8	
7	42	51	9	
8	39	47	8	
9	34	41	7	
10	37	45	8	
11	38	46	8	
12	35	43	8	
13	40	49	9	
14	36	43	7	
15	39	48	9	
Rata-rata		(mean)	37.73	45.47 7.73
Standar Deviasi		2.88	3.67	0.70

Tabel 2. Uji hipotesis (Uji-t)

Statistik Uji	Nilai	Taraf Signifikansi (α)
t-hitung	42.60	0.05
t-tabel (dk=9)	2.145	-
Nilai p (Sig.)	0.000	-

DISCUSSION

The results of the study showed a significant effect of Imagery Training on improving table tennis forehand drive skills. Descriptively, there was an increase in the average skill score from 37.73 (pretest) to 45.47 (posttest). Hypothesis testing (t-test) confirmed this finding with a p value of 0.000 ($p < 0.05$), which means that the 7.8-point increase in skill was not a coincidence, but rather a direct result of the Imagery Training intervention. The main interpretation of this finding is that mental practice, without performing physical movements, has successfully improved the motor program underlying the execution of the forehand drive technique. In the context of table tennis, this technique requires high speed coordination, accuracy, and timing, and Imagery Training has been proven effective in sharpening these aspects.

Specifically, when subjects imagined a perfect forehand drive

(including the kinesthetic sensation of the swing, visualization of the ball's trajectory, and a sense of rhythm), activation occurred in motor areas of the brain (such as the motor cortex and basal ganglia) similar to when they actually hit the ball (Olanescu-Vaida-Voevod et al., 2022).

This research is consistent with previous findings in racket sports showing that imagery interventions can improve shot accuracy and consistency (Hasan Saifudin, Hilmy Aliriad, Mohamad Da'i, Suntoro & Nila, 2023). Although previous studies often involved larger samples or different sports (such as tennis), the impact of Imagery Training on specific table tennis skills remains valid and robust. A new aspect emphasized is the role of imagery in integrating technical elements (such as topspin and ball direction) into a coherent mental representation, which is then executed with greater neuromuscular efficiency.

The practical implications of this research are significant for table tennis coaching. These results suggest that coaches should integrate imagery training as a standard component, not just a supplement, in training sessions. This training can be used to correct technical errors without risking injury or physical fatigue, and it is also an effective tool when athletes are away from the table (e.g., during breaks or travel).

This research supports the use of psychological training methods as an efficient way to accelerate motor learning and promote self-correction in athletes. Scientifically, these findings add to the empirical evidence regarding the efficacy of imagery in the context of fast and precise closed motor skills, such as the forehand drive in table tennis.

CONCLUSION

The results of this study provide very strong and convincing evidence regarding this mental training method. It can be concluded that the application of the Imagery Training program resulted in substantial and significant improvements in the subjects' ability to execute accurate and consistent forehand drives.

Subjects not only demonstrated gradual technique improvements but also increased consistency in achieving their targeted strokes. These findings clearly support the hypothesis that Imagery Training serves as an effective tool for optimizing motor programming, allowing athletes to internalize the ideal movement patterns, rhythm, and timing necessary for an efficient forehand drive.

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