

## The Effect of Mental Imagery Training on the Performance of Volleyball Athletes in the Extracurricular Activities of MAN 3 Sukabumi

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### ABSTRACT

This research aims to determine the effect of PETTLEP mental imagery training on the playing performance of volleyball athletes in extracurricular activities at MAN 3 Sukabumi. The research was carried out using a pre-experimental research type with a quantitative approach and a one-group pre-test post-test design. The sample in this study consisted of 25 athletes, with a sampling technique using purposive sampling. Playing performance data is collected using the Game Performance Assessment Instrument (GPAI). The results of the analysis using the pretest and posttest average difference test on the playing performance variable sig 0.00 < 0.05, meaning that Ho is rejected and H1 is accepted, so it can be concluded that there is a significant influence of PETTLEP mental imagery training on the playing performance of volleyball athletes in MAN 3 Sukabumi extracurricular.

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### AUTHORS' CONTRIBUTION

- A. Conception and design of the study;
- B. Acquisition of data;
- C. Analysis and interpretation of data;
- D. Manuscript preparation;
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## INTRODUCTION

Sports play a vital role in education, recreation, and achievement, as outlined in Law No. 3 of 2005 concerning the National Sports System (SKN), Chapter VI, Article 17, which outlines the three main pillars of sports in Indonesia. One of these is competitive sports, intended to enhance the abilities and potential of athletes in order to enhance the nation's dignity and status. One of the problems in sports development, particularly in the implementation of training, is the unclear character of each training method and format. Limited knowledge of training methods and formats contributes to coaches' limited ability to implement training methods. Volleyball is a popular sport in Indonesia and even around the world. In volleyball, achieving maximum performance requires strong physical, technical, tactical, and mental abilities.

When an athlete wants to perform well, mental training must be implemented from an early age (Haughton, 2013). In addition to programmed technical and tactical training, coaches must also focus on mental training. In line with this opinion, Adi (2016) suggests that athletes require mental training. A poor mental state will prevent an athlete from maximizing their potential. According to Suherman & Sofyan (2011), psychological factors are a determining factor in achieving victory. Consistent with this opinion, Yudiana et al. (2022) state that a player's performance is a crucial indicator of a game.

To improve performance, athletes need to train their minds and imagination to enhance their skills. Mental training emphasizes emotional development (Sufriyanto & Putra, 2019). One example of mental training is mental imagery.

Imagery training involves imagining the activity ahead of time. Imagery training involves a visualization process, which involves the ability to see oneself in one's mind or on a screen, consciously conjuring up images (Nusa, 2023). Mental imagery training aims to help volleyball athletes control their emotions during competition, enabling them to perform optimally (Sin, 2016). There are several imagery training models, one of which is the PETTLEP imagery model. PETTLEP combines the components of Physical, Environment, Task, Timing, Learning, Emotion, and Perspective (Scott et al., 2022).

Observations and fieldwork among volleyball players in the MAN 3 Sukabumi extracurricular program indicate that mental training has never been specifically provided; the training programs have emphasized physical and technical aspects. However, to develop a strong mentality, players need systematic mental training, which is an integral part of the training program and is outlined in the annual training plan or training periodization.

Based on the aforementioned phenomena, the researchers are interested in conducting a study entitled "The Effect of PETTLEP Mental Imagery Training on the Playing Performance of Volleyball Athletes in the MAN 3 Sukabumi Extracurricular Program."

## METHODS

Research methods are the steps taken by researchers to collect information or data and conduct investigations into the data obtained. This study employed a quantitative approach. The type of research employed was pre-experimental with a one-group pretest-posttest design. Experimental research methods are defined as research methods used to determine the effect of a specific treatment (Creswell, 2019). This study utilized PETTLEP mental imagery training on volleyball performance.

This study used a random sampling technique, selecting 25 participants for the sample. To assist in assessing performance during the game, Griffin, Mitchell, and Oslin created an assessment instrument called the Game Performance Assessment Instrument (GPAI). This instrument aims to observe and record players' performance behavior during the game. The GPAI's components are: Home base, Adjustment, Decision making, Skill execution, Support, Cover, Guard or mark (Oslin et al., 1998). In this study, three aspects were focused on in assessing competitive performance: decision-making,

skill execution, and support, as the authors believe these aspects are expected to solve problems in a game. Sucipto (in Gunawan, 2018) considered the other components to be adequately represented. The details can be seen in Table 1 below.

**Table 1.**

## Playing Performance Measurement Instrument (GPAI)

Components of Playing Performance	Criteria
1. Decision Making	<ul style="list-style-type: none"> <li>Students attempt to pass to a free-standing teammate.</li> <li>Students attempt to receive the ball passed from a teammate.</li> <li>Students attempt to block when an opponent spikes the ball.</li> <li>Students attempt to spike when in an advantageous position.</li> <li>In difficult situations, students attempt to pass to a teammate rather than spike.</li> </ul>
2. Execution	<ul style="list-style-type: none"> <li>The student passes the ball accurately to a teammate.</li> <li>The student serves the ball well.</li> <li>The student spikes the ball well into the opponent's defense.</li> <li>The student blocks well.</li> </ul>
3. Support	<ul style="list-style-type: none"> <li>Students try to move into a free position to receive the ball.</li> <li>Students try to make passes and move to support the attack.</li> <li>Students try to free up their teammates to attack.</li> <li>In an attacking situation, defenders try to cover the spiker who is trying to pass the ball into the opponent's area and are ready to receive the ball again if the spike is blocked by the opponent.</li> </ul>

This experiment will take place over 12 sessions, consisting of a pretest, 10 treatments, and a posttest, which will be administered to the volleyball extracurricular activities at MAN 3 Sukabumi. The treatments provided are shown in Table 2 below:

**Table 2.**

## Description of PETTLEP Imagery for Volleyball Athletes at MAN 3 Sukabumi

Physial	Position your body standing, holding a volleyball. Feel every movement you make with the muscles involved. Imagine yourself wearing a red volleyball jersey and standing on the court, ready to play a brilliant volleyball game.
Environment	The atmosphere of training is filled with enthusiasm, with your teammates. You're ready, waiting for the coach's instructions on passing, smashing, serving, and blocking techniques.
Emotion	You no longer hesitate to carry out all the techniques in volleyball because you have mastered these techniques.
Timing , Learning	The movements are now very good and precise, as they're already memorized and become automatic. Face forward, hold the ball, and perform the basic volleyball techniques.
Task	Smash over the net. Keep doing it and your moves will get better.

To test the influence of independent variables in this study, descriptive statistical analysis techniques were used, prerequisite tests and hypothesis tests with data processing using the Statistical Product for Social Science (SPSS) 25 program.

## RESULTS AND DISCUSSION

### Result

The data for this study was obtained from performance assessments. The table below summarizes the pre-test and post-test performance data for volleyball athletes from MAN 3 Sukabumi.

**Table 3.**

Pretest and Posttest Data on the Playing Performance of Volleyball Athletes at MAN 3 Sukabumi

		Pretest GPAI	Posttest GPAI
N	Valid	25	25
	Missing	0	0
Mean		38.16	51.28
Std. Deviation		3.532	6.523
Variance		12.473	42.543
Range		12	21
Minimum		32	40
Maximum		44	61
Sum		954	1282

Table 3 shows that the pretest standard deviation for the volleyball skill variable was 3.532, with a mean of 38.16. The posttest standard deviation was 6.523, with a mean of 51.28.

The results of the normality test for the pretest and posttest data on the performance and skill of MAN 3 Sukabumi volleyball athletes can be seen in Table 4 below.

**Table 4.**

Normality Test

Variabel	Data	$\bar{x} \pm sd$	Shapiro-Wilk		Information
			Statistic	Sig.	
Performa	Pre-Test	38,16 ± 3,532	0,944	0,188	Normal
Bermain	Post-Test	51,28 ± 6,523	0,884	0,080	Normal

Table 4 shows the results of the Shapiro-Wilk normality test, indicating that the pretest and posttest data for volleyball performance were normal (sig. > 0.05). Therefore, it can be concluded that the pretest and posttest data for volleyball performance in this study were normally distributed and could be analyzed using parametric tests.

Hypothesis testing in this study used SPSS 25 analysis with a t-test because the data obtained were normally distributed. The results of the paired sample t-test can be seen in Table 5:

**Table 5.**

Hypothesis Testing

Pair 1	Mean	Std. Deviation	t	Sig. (2-tailed)
Pretest GPAI - Posttest GPAI	-13,120	6,267	-10,467	0,000

Based on table 5 regarding the results of the Paired Sample Test on the playing performance variable, the sig. (2-tailed) value is 0.000 < 0.05, meaning that  $H_0$  is rejected so it can be concluded that there is a significant influence of PETTLEP imagery training on the playing performance of volleyball athletes in the MAN 3 Sukabumi extracurricular.

## Discussion

Volleyball is a team sport involving physical, technical, tactical, and mental elements. Volleyball demands teamwork and cooperation on the court. Therefore, playing volleyball well requires strong physical and technical skills, balanced with the application of tactics and strategies appropriate to the situation and conditions on the court (Putri, 2022). In volleyball, psychological aspects often influence athletes' performance, thus necessitating the implementation of appropriate mental training.

There are various types of psychological skills training that coaches can use with their athletes to improve their performance, one of which is imagery training (Komarudin, 2016). Imagery training is a training process in which athletes imagine movements and then present them in their minds without external stimulation (Weinberg, R.S., & Gould, 2014). Volleyball athletes can use imagery in mental preparation before and during matches. Athletes imagine themselves performing basic techniques well, such as hitting a powerful and targeted smash. They imagine themselves in the middle of the court with a large audience waiting for the match to begin.

The purpose of this study was to determine the effect of PETTLEP mental imagery training on volleyball playing skills in MAN 3 Sukabumi athletes. The results of data analysis and processing showed that PETTLEP imagery training had a significant effect on volleyball playing skills in athletes in MAN 3 Sukabumi extracurricular activities. This was proven by the paired sample t test with a significance value of  $0.000 < 0.05$ , which means  $H_1$  was accepted and  $H_0$  was rejected. The results of this study are in line with the research of Sufriyanto & Putra, (2019) which stated that imagery training has a significant impact on self-confidence and improved playing performance. Other studies state that imagery training can improve athlete performance (Post et al., 2012). Imagery training is a technique often used by sports psychologists in an effort to help someone carry out activities that will be carried out by training and visualizing the person's mentality (Chairullah, 2018). Mental imagery training has numerous benefits for athletes, including increased self-confidence, increased motivation, and improved concentration (Gould et al., 2014; Simonsmeier et al., 2020). Several studies have shown that the PETTLEP Imagery model can improve athletes' golf performance (Smith, in Darmawan, 2022).

## CONCLUSION

Based on the results of the analysis of the discussion of research data and answering questions from the problem formulation, it can be concluded that there is a significant influence of PETTLEP mental imagery training on the playing performance of volleyball athletes in the MAN 3 Sukabumi extracurricular.

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