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MENTAL IMAGERY TRAINING'S RELATIONSHIP TO ANXIETY CONTROL IN CIANJUR HANDBALL ATHLETES

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Abstract

This study aims to identify the relationship between mental imagery training and anxiety control in handball athletes in Cianjur. The problem of anxiety is often psychological factors that hinder athlete performance, especially when facing pressure in competition. The research method used is a quantitative approach with a correlational design. The sample in this study was 28 handball athletes selected through purposive sampling techniques. The research instrument was a questionnaire that has been tested for validity and reliability. The results showed that there was a very strong and significant relationship between mental imagery training and athletes anxiety control ($r = 0.770$; $sig = 0.001$). In addition, the results of a simple linear regression analysis showed that mental imagery training contributed 59.2% to anxiety control. This finding indicates that the better an athlete is at implementing mental imagery training, the higher their ability to control anxiety. This study contributes to the development of mental training strategies in sports, especially in improving the psychological readiness of handball athletes. Mental imagery training can be used as a practical approach by coaches to manage competitive pressure experienced by athletes before and during matches.

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INTRODUCTION

Sports are movements of the body that are done consciously and have certain goals and objectives (Agita & Tansir, 2021). Sports have many benefits, one of which is increasing

human resources, which is known to improve a person's abilities, both in terms of affective, psychomotor, and cognitive. Someone who exercises regularly can improve physical fitness, and will make them more effective in carrying out daily activities. In line with what

(Pranata, 2022) said, namely, sports can maintain health, prevent various diseases, and improve health.

Regular exercise can boost the immune system, keep the body fit, and reduce the risk of developing various diseases such as diabetes, hypertension, obesity, and heart disease. Exercise also helps mental health because it releases endorphins, which can reduce stress and improve mood (Jin Yang et al. 2024).

Then in sports there are several goals, one of which is competitive sports. Where this competitive sport has the aim of becoming a champion or being the best of the other contestants, which is able to provide an impact in terms of pride that can provide a good image to others. As stated by (Rohendi & Rustiawan, 2020), basically sports achievements have a big impact on a region which is a source of pride or achievement so that it is appreciated by other regions, political recognition, and even in the economic sector.

Various sports are developing rapidly in Cianjur District, one of which is handball. Although handball is not as popular as football, this sport is getting more attention in Cianjur District thanks to competitions such as the Pekan Olahraga Kabupaten (PORKAB), which provides opportunities for athletes to hone their skills.

Handball is a sport that requires speed, physical endurance, and good teamwork. Athletes who play handball must also be able to make decisions quickly, maintain balance, and have good technical skills. However, in addition to physical and technical aspects, psychological aspects also affect athlete performance; one example is anxiety before and during competition (Pedersen and Johansen, 2023).

The performance of handball athletes in Cianjur District, on the other hand cannot be separated from the emergence of anxiety that can interfere with athlete performance. Prioritizing the components of physical condition and technique supported by controlling emotions such as anxiety is also

important to achieve optimal results. There have not been many studies that specifically discuss the relationship between mental imagery training and anxiety control in handball athletes at the regional level, especially in Cianjur District. Previous studies have focused on other sports such as examining mental imagery in the context of improving general performance, without specifically highlighting the function of athletes anxiety.

The development of a combination of lack of courage and anxiety about things that are not clear, occurs due to several factors (Supriyatni et al., 2020). In this case, the study will review anxiety in detail. Athletes who experience anxiety can experience negative impacts on their physical and mental performance. Athletes often lose focus due to anxiety due to concerns about performance or possible failure.

Athletes will have difficulty performing the required techniques or strategies, especially in sports such as handball which require accuracy and agility. In line with what was said (Supriyatni et al., 2020), namely that anxiety related to athletes, including competition anxiety, is one of the things that causes the athlete to be at peak performance. Anxiety can interfere with athlete performance and even hinder achievement if not managed properly. This can lead to impaired concentration, decreased self-confidence, muscle tension, and poor decision making.

One method used to overcome anxiety in sports is mental imagery training. Imagery training is imagination training by imagining sports movements in their minds without external stimulation (Nopiyanto et al., 2022). Mental imagery training allows athletes to create situations or experiences that allow them to control anxiety, either before or during a game, and improve their performance. Mental imagery training is a psychological technique that involves forming positive mental images or supportive scenarios in the athlete's mind.

The percentage or research literature that has been conducted on mental imagery training in sports concentrates on improving the overall performance of athletes or in very popular sports such as football and badminton. Research that specifically examines relationships between mental imagery training and anxiety levels in handball athletes, especially at the regional level such as Cianjur District.

In addition, most existing studies discuss mental imagery training as part of a strategy to improve technical and tactical skills in sports. Studies that address how mental imagery training plays a role in overcoming specific anxiety in handball athletes are a gap in this research (Bacić et al., 2022). Therefore, this study will provide a new contribution by focusing on the relationship between mental imagery training and anxiety levels in handball athletes in Cianjur District, which is expected to be a reference in coaching local athletes.

Based on what has been described by the researcher, the purpose of this study is to determine how much influence mental imagery training has on the ability to control anxiety in handball athletes in Cianjur District. By knowing how much influence mental imagery has on anxiety, it is hoped that it can help develop mental training programs for athletes, especially in Cianjur District.

This research has led to many advances in sports science, especially athlete psychology, by providing (Wang et al., 2025):

1. Focusing on Handball Players in Cianjur Regency

This research not only studies the relationship between mental imagery training and overall anxiety, but also studies handball athletes in Cianjur District who participate in events such as the Pekan Olahraga Kabupaten (Porkab). This will provide more relevant data on the situations and difficulties faced by athletes at the local level (Nikolić et al., 2022).

2. Structured Mental Imagery Training-Based Approach

This research will examine how mental imagery training can be used systematically to reduce anxiety in athletes before and during matches (Fekih et al., 2021).

3. Recommendations for Mental Training Programs for Handball Athletes

Thus, this research is not only theoretical but also has a practical impact on the world of sports, especially in improving the mental readiness of athletes in Cianjur District, because the results are expected to be the basis for the development of imagery-based mental training programs that can be applied by handball coaches and athletes in Cianjur District.

This research is expected to help coaches, athletes, and others understand the benefits of mental imagery training to reduce anxiety and help athletes perform better in competitions.

METHODS

This study used a correlational quantitative method (Ningsih & Rinaldi, 2019). The population consists of 28 handball athletes selected through purposive sampling. These criteria were chosen because the researcher has characteristics that are relevant to the focus of the research, so that the data obtained will be more specific and in-depth (such as: male gender, age 20 years, athlete PORPROV JABAR 2026).

Data collection instruments include:

1. A mental imagery training questionnaire developed based on Paivio's theoretical framework.
2. The Competitive State Anxiety Inventory-2 (CSAI-2) was used to measure the level of anxiety control in this study. Three main components of competitive anxiety were measured by this instrument: cognitive anxiety, somatic anxiety, and self-confidence level.

Validity and reliability tests were conducted prior to data collection. Data were analyzed using descriptive statistics, correlation analysis (Pearson Product

Moment), and simple linear regression through SPSS version 29.

FINDINGS AND DISCUSSION

Findings

A. Descriptive Statistics

The variables of mental imagery and anxiety are presented with descriptive statistics. The number of respondents, minimum and maximum values, mean, and standard deviation of each variable are shown (Kumar, 2016). The following are the results of descriptive statistics:

Tabel 1.1
Descriptive Statistics

Variable	N	Min	Max	Mean	Std. Deviation
Imagery Mental	28	26	44	36	5
Anxiety	28	28	46	37	5

The results of descriptive statistics show that the values of both variables are within a reasonable range, indicating that athletes have different levels of mental imagery and anxiety, but remain in a category that can be studied.

B. Assumption Test Results

Some common assumptions tested include normality, and linearity. The normality assumption aims to determine whether the distribution of data or residuals follows a normal distribution pattern (Hair et al., 2010).

1) Normality Test

The normality test aims to see whether the data distribution of each variable follows a normal distribution (Yagin, Yagin, & Pinar, 2024). This test is important because it is one of the prerequisites in parametric tests.

Table 1.2
Shapiro-Wilk Normality Test

Variable	Statistic	Df	Sig.
Mental Imagery	0.971	28	0.597
Anxiety	0.969	28	0.548

From the data, both variables state that they are normally distributed, then correlation analysis can be carried out using parametric methods such as the Pearson test.

2) Linearity Test

Before the correlation and regression tests are carried out, a linearity test is carried out to ensure that the relationship between the independent variable (mental imagery) and the dependent variable (anxiety) is linear Meshkini & Mousavi (2011). Here are the results of the linearity test:

Table 1.3
Linearity Test

Mental Imagery*Anxiety	Df	Mean Square	F	Sig
Deviation From Linearity	13	10.320	10.320	0.479

Source: with SPSS 29

The test results show a linear relationship between anxiety and mental imagery. In this case, it can proceed to the correlation analysis stage.

C. Results of Mental Imagery and Anxiety Measurement

a) Mental Imagery

After the data was collected, the mental imagery values were entered into five categories based on certain intervals, ranging from very low to very high. The goal is to find out how far each category is spread among respondents (Di Corrado et al., 2020). The following are the measurement results for both variables:

Table 1.4
Mental Imagery Measurement Results

No	Interval	Kriteria	Persentase
1	26-28	Very Low	14,29%
2	29-30	Low	28,57%
3	31-32	Medium	34,29%
4	33-34	High	17,14%
5	35-36	Very High	5,71%

Most athletes have medium to low mental imagery abilities. These results indicate that the majority of athletes have not fully mastered the ideal mental visualization technique. Therefore, more regular and continuous mental imagery training is needed to help athletes improve their psychological readiness before competing, control emotional stress, and imagine match situations. Therefore, mental imagery training is very important for the development of handball athletes and is not just a complement.

b) Anxiety

No	Interval	Criteria	Persentase
1	26-28	Very Low	11,76%
2	29-30	Low	26,47%
3	31-32	Medium	32,35%
4	33-34	High	20,59%
5	35-36	Very High	8,82%

Most athletes showed moderate to low levels of anxiety. The results indicate that athletes can usually cope with the emotional stress they experience before and during the match. In other words, anxiety is still within reasonable limits and does not interfere with concentration or performance. However, to ensure that anxiety remains under control and does not increase in more challenging competition situations, ongoing psychological coaching techniques are needed.

D. Hypothesis Testing

Hypothesis testing as a step in statistical inference that involves designing mathematical hypotheses and testing them through measured data (Booth, Doumas, & Murray, 2017).

1) Correlation Test

The Pearson Product Moment Correlation statistical analysis was used to answer the problem formulation and test the truth of the research hypothesis. This method was chosen because it is able to measure the

direction and strength of the relationship between two variables; the independent variable is mental imagery training, and the dependent variable is the level of anxiety (Kaya & Biçer, 2025). The purpose of this analysis is to determine how strong the relationship is between athletes' ability to perform mental imagery and their ability to control anxiety that arises before or during the match (Williams & Cumming, 2013). The following are the results of the product moment correlation test:

Variable	N	Pearson Correlation	Sig.	Information
Mental Imagery	28	0.770	0.001	correlated
Anxiety	28	0.770	0.001	correlated

Source: with SPSS 29

Discussion

Based on the results of the analysis, it shows a significant relationship between mental imagery training and the level of anxiety of handball athletes. This means that the better an athlete's ability to control anxiety, the better their ability to draw mentally. These results confirm that mental training is very important for athlete development, especially in dealing with psychological pressure in competitive situations. b) Linear Regression Test

Determinasi	Value	Information
R Square	0.592	correlated 59,2%
Sig	0.001	If the sig value <0.05 there is an influence on the dependent variable.

The results of the data analysis showed a very strong and significant correlation between mental imagery training and anxiety control in handball athletes in Cianjur Regency. The

results of the Pearson correlation test showed that the research hypothesis was accepted with an r value of 0.770 and a significance level of 0.001 ($p < 0.05$). Athletes who do better mental imagery training have a better ability to control anxiety physically and mentally.

These results are in line with the Dual Coding theory developed by Paivio (1985), which states that mental representations that combine visual and verbal elements can improve cognitive processes, including controlling emotions such as anxiety. Mental imagery training helps athletes imagine various situations in the game. This allows them to use strategies, game techniques, and special situations in the game. This helps athletes prepare their minds for the real situations they will face, which reduces emotional stress and uncertainty.

The mental imagery training model from Holmes and Collins (2001) which created the PETTLEP Imagery model, combines seven components (physical, environment, task, time, learning, feelings, perspective) can improve training efficiency and mental readiness. Athletes who have practiced visualization before the match usually appear more confident and focused, and they are less likely to panic when facing important situations in the game (Strachan & Munroe-Chandler, 2006).

Mental imagery training contributed 59.2% to anxiety control ($R = 0.592$), which was processed or the result of a simple linear regression test. These results indicate that the success rate of mental imagery training is more than half of the difference in anxiety control ability. The last 40.8% is influenced by things like competition experience, social support, beliefs, and individual coping strategies.

This study is in line with the findings of Maha Dewi Afifah Nurhadi (2023), who found that mental imagery training greatly helps athletes control their anxiety. In her study, athletes who routinely visualized before competing tended to experience lower levels of anxiety than athletes who did not. These results support the idea that mental imagery training can improve technical performance in addition to providing significant psychological assistance in dealing with competitive pressure (Simonsmeier et al., 2021).

Therefore, it can be concluded that mental imagery training is a useful method to help athletes overcome their anxiety. It is recommended that coaches and sports coaches

include this training in their coaching programs regularly, both during preparation and before the match. With continuous and properly directed training, athletes will become more technically and mentally prepared, which will ultimately have a positive impact on their overall performance in competition (Liu et al., 2025).

To facilitate understanding and reading, the results of the study are described first, followed by the discussion section. The results subtitles and discussion subtitles are presented separately. This section must be the most numerous, a minimum of 60% of the entire body of the article.

CONCLUSION

There is a significant relationship between mental imagery training and anxiety control among handball athletes in Cianjur. Athletes who engaged more frequently and effectively in mental imagery reported lower levels of competitive anxiety. Coaches and sports psychologists are encouraged to integrate mental training into regular physical training sessions to enhance mental toughness and performance consistency.

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