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Effects of imagery training on Concentration and Performance of Karate Kata Athletes based on Gender Review

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Abstract

Psychological factors are one of the factors that support athlete performance. Therefore, there is a need for psychological training to overcome various psychological problems, especially the concentration and performance of karate athletes. This study aims to examine the effect of imagery training on the concentration and performance of kata karate athletes based on gender. This research uses an experimental method with a post-test only design. The sample used in this research was 10 karate kata Gokasi athletes from Bandung City, consisting of 5 female and 5 male athletes aged 11-13 years. Intensive imagery training was given as a research treatment, where they would imagine detailed word movements with an exercise duration of 10-15 minutes per session, frequency 3-4 times a week for 4 weeks. Measurements were carried out in two aspects, namely concentration using the Concentration Grid Test (CGT) and performance using the jury's assessment through mini-events. Data analysis was carried out using the SPSS Version 27 statistical test. The results of the study showed that the impact of visualization training on the focus and performance of karate kata athletes, both male and female, varied greatly. Male athletes outperformed female athletes in the concentration variable, while female athletes outperformed male athletes in the performance variable. Thus, it can be said that imagination training is one of the exercises that can be used to help karate kata athletes, both male and female, to be more focused and perform better.

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INTRODUCTION

Concentration is a common issue that can affect athletes› performance in sport. Factors that can cause concentration problems include external distractions, anxiety, lack of focus, and lack of mental training (Parnabas et al., 2015). Overcoming concentration problems, athletes can try relaxation techniques, meditation, visualization and breathing exercises to help improve their focus and concentration during training and competition (Weinberg et al., 2016). Good concentration allows an athlete to pay close attention to an opponent›s movements, respond quickly, and maintain composure in stressful situations (Vesković et al., 2019). Psychology has a very important role in the lives of athletes, helping them manage emotions, maintain motivation, cope with stress, and improve their performance (Komarudin et al., 2021).

Optimal performance and controlled concentration of Kata athletes allows for excellence in controlled movements and proprioceptive skills (Molinaro et al., 2020). Underperformance during matches can be caused by factors such as physical fatigue, lack of mental focus, lack of adequate preparation, or lack of experience in match situations (Kurtovic, 2017). To improve performance, it is important to maintain optimal physical condition, train concentration and mental focus, develop appropriate match strategies, ensure adequate recovery, and increase experience and practice in match situations (Simonsmeier et al., 2018).

Mental imagery training on reducing athletes› anxiety during exercise is very significant (Lindsay et al., 2021). Previous research (Lindsay et al., 2021) found that the use of mental imagery can effectively reduce athletes› anxiety levels and improve their performance, especially when combined with other psychological strategies such as self-talk, relaxation, and goal setting. Imagery in karate training can help athletes control competitive anxiety, improve performance, and strengthen their mental skills during matches. With consistency in imagery training, athletes can reduce anxiety levels, improve focus, and concentration, thus allowing them to perform to the best of their abilities in karate competitions (Herdiansyah et al., 2022).

Performing karate in front of an audience is a potential increase in anxiety, pressure, evaluation, and perceptual distortions that can affect athlete performance (Khusna et al., 2023). Athletes need to manage these issues through mental training, relaxation techniques, and focus on the execution of learned techniques to maintain optimal performance (Bell & Yee, 2014). Mental imagery training is important in sport psychology because it can help athletes increase confidence, manage stress, increase focus, and improve their performance during competition (Setyawati, 2014). By systematically imagining the actions required to achieve performance goals, athletes can holistically prepare themselves mentally and emotionally to perform at their best level in sport (Aoyagi et al., 2018).

There is still a lack of coaches using mental or psychological exercises in athlete training (Arazi & Izadi, 2017). However, increased awareness of the importance of psychological aspects in sport has led to an increased interest in the application of psychological techniques to improve athlete performance. With more coaches and athletes realizing the benefits of mental training, it is expected that the use of sport psychology will further increase in the future (Lochbaum et al., 2022). This research is particularly important as the article provides valuable insights into how sport psychology can influence athletes› performance in competition (Endo et al., 2023).

Based on the results of the background review, this study formulates several problems that need to be analyzed. Is there a significant difference in concentration levels between karate athletes who undergo imagery training and those who do not?, can imagery training improve the performance of karate athletes in kata competition?, is there a difference in the effect of imagery training on concentration and performance between male and female karate athletes?. So the purpose of this study is to determine the imagery training on Concentration and Performance of Kata Karate Athletes based on Gender Review.

METHOD

This study only used post-test design and experimental procedures. the sample of this study was 10 karate kata gokasi athletes in bandung city consisting of 5 girls and 5 boys with an age range of 11-13 years. intensive imagery training was given as a research treatment, where they would imagine kata movements in detail with a training duration of 10-15 minutes each session, frequency 3-4 times a week for 4 weeks (Baidillah et al., 2023). measurements were made in two aspects, namely concentration and performance. to measure concentration, the authors used the concentration grid test (cgt) which involves ath-

letes in marking as many sequential numbers as possible within a certain time on a grid divided into small boxes with random numbers in them usually about 1 minute (Tache et al., 2017). as for measuring performance, the author held a kata karate mini-event with 1 referee 4 judges according to wkf 2024 regulations to assess athlete performance (WKF, 2024). the results of this study were analyzed using statistical tests using spss version 27.

RESULTS AND DISCUSSION

The data obtained were processed and analyzed using Statistical Product and Service Solution (SPSS) Version 27, the statistical description can be seen in **Table 1.**

Table 1. Descriptive Statictics

Variabel	Group	Min	Max	Sum	Mean	Std. Deviation
Concentration	Male	6	12	44	8,8	2,58844
	Female	4	7	27	5,4	1,14018
Performance	Male	17,7	20,2	94	18,8	0,89722
	Female	19,6	21,1	101	20,2	0,60000

Based on **Table 1** the data obtained in conducting a posttest on a sample group of 10 athletes consisting of 5 men and 5 women, the average value of the male athlete's concentration was 8.8000 and the female athlete's concentration was 5.4000. While the average value obtained for the male athlete's performance was 18.8000 and the female athlete's performance was 20.2000. With a standard deviation of the male athlete's concentration of 2.58844 and the female athlete's concentration of 1.14018. While the standard deviation of the male athlete's performance was 0.89722 and the female athlete's performance was 0.600000. The minimum concentration value for male athletes was 6.00 and the female athlete's concentration was 4.00. While the minimum performance value for male athletes was 17.70 and the female athlete's performance was 19.60. Then the maximum concentration value for male athletes was 12.00 and the female athlete's concentration was 7.00. Meanwhile, the maximum performance value for male athletes was 20.20 and the performance of female athletes was 21.10.

The results of the data normality test using the Shapiro-Wilk Test. Based on Table 2, the significance value for the performance of male and female athletes (0.455; 0.440)> 0.05 was obtained. While the significance value for the concentration of male and female athletes (0.501; 0.841)> 0.05 so that both data are stated as "Normally Distributed". Therefore, the author uses a parametric approach in making hypotheses.

The results of hypothesis testing using the Independent Sample T-test. Based on Table 3, it can be seen that the t value of the performance variable is 2.900 with a Sig value. (2-tailed) of 0.020 <0.05 which means that H0 is rejected, so it can be stated that there is a significant difference in the effect of imagery training on the performance of male and female kata karate athletes. Furthermore, the t value of concentration is 2.688 with a Sig. (2-tailed) of 0.039 <0.05 which means that H0 is rejected, so it can be stated that there is a significant difference in the effect of imagery training on the concentration of male and female kata karate athletes.

Psychological differences between women and men can be reflected in various aspects of behavior and emotional responses (Deng et al., 2016). In general, girls tend to be more open in communication and prefer to share their feelings and emotions, while boys tend to be more direct and solution-focused when communicating (Tannenbaum & Bekker, 2019). In addition, women are often perceived to be more emotional than men, which can affect the way they express emotions and respond to emotional situations (Fischer & Lafrance, 2015). Despite these differences, it is important to remember that each individual is unique and factors such as life experiences and social environment also play an important role in shaping one's psychological characteristics (Umniyah et al., 2021).

The performance of athletes, both male and female, cannot be generally concluded that one gender has better performance judgment than the other. Athlete performance is influenced by various factors such as genetics, training, nutrition, health, and psychological factors (Logue et al., 2018). Although there are differences in physical abilities between men and women, such as strength and speed, in the context of certain sports, the performance of female athletes can be comparable or even exceed the performance of male athletes (Lockie et al., 2019). Proper support in terms of training, nutrition and health management will help athletes reach their full potential, both male and female (Pierre et al., 2022).

Imagery training has different effects on athletes' performance and concentration. In imagery training, athletes imagine in detail performing movements or actions related to their sport (Zhang et al., 2017). Athletes' performance may improve because imagery training strengthens the connection between thoughts and physical

actions. In addition, it can also increase athletes' confidence and motivation. However, its impact on concentration may vary (Fitria, 2018). Some athletes may experience improved concentration, while others do not notice significant changes. Factors such as time constraints and frequency of practice also affect the results of imagery training. Therefore, it is important for athletes to understand and customize these exercises according to their individual needs and characteristics (Uchihara et al., 2019).

This research is a strong reference for practitioners in the field, given the lack of application of psychological exercises. Psychological training tends to be ignored because it is considered unnecessary to train or even reluctant to carry it out because it is considered something difficult (Saputra et al., 2022). The results of this study are clear evidence that psychological training, specifically in the form of imagery training, has proven to have an influence on the concentration and performance of karate kata athletes, both male and female athletes. So the author feels that it is no longer possible to ignore psychological training for kata karate athletes. This study also provides evidence of the approach that psychological training, especially imagery training, has a positive impact on the concentration and performance of kata karate athletes (Baidillah et al., 2023). Athletes can maximize their abilities in matches by combining physical and mind actions. Therefore, athletes and coaches in the field should pay attention to the importance of involving psychological exercises in athletes' training programs. Thus, athletes can achieve their best performance and achieve success in competition (Gross et al., 2018).

CONCLUSION

This study concludes that imagery training is one of the exercises that can be used to improve the concentration and performance of kata karate athletes, both for male and female athletes. Therefore, the results of this study have a good impact on coaches to pay more attention to psychological factors, especially concentration and also the performance of kata karate athletes in order to reach peak conditions better and according to the target of the championship competition to be achieved in kata karate athletes.

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