15 (2) (2026) 1140-1146

Journal of Physical Education, Sport, Health and Recreations

http://journal.unnes.ac.id/journals/peshr

Effect of Mindfulness Training on Emotional Stability of Karate Kata Athletes

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Keywords

Karate Athletes; Performance; Emotional Stability

Abstract

In karate kata, athletes often struggle to stabilize emotions during competition, which negatively affects concentration, movement precision, and overall performance quality. Emotional stability is crucial because kata demands high levels of concentration, precision, and self-control. This study aimed to determine the effect of mindfulness training on the emotional stability of karate kata athletes. Using an experimental method with a one-group pretest-posttest design, 15 karate athletes from Cimahi City aged 8–12 years were selected as samples. The research instrument was an emotional stability questionnaire consisting of 24 items across three dimensions that had been tested for validity and reliability. Data were analyzed using descriptive statistics, normality tests, homogeneity tests, and paired sample t-tests. The results indicated that mindfulness training significantly improved emotional stability ($p < 0.001$), with scores increasing from 66% to 73%, representing a 7% improvement. This enhancement in emotional regulation supports better execution of kata movements under competitive pressure. These findings suggest that mindfulness training is an effective psychological strategy for enhancing emotional stability among young karate kata athletes. Therefore, its integration into regular training programs is recommended to support optimal athletic performance.

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p-ISSN 2460-724X
e-ISSN 2252-6773

INTRODUCTION

In the world of sports, especially in the sport of karate, it is often seen that the success of an athlete is not only judged by physical and technical abilities, but is also influenced by the psychological condition of the athlete himself.. This is particularly evident in karate kata, where athletes are required to perform precise, rhythmic, and expressive movements, demanding high levels of concentration and emotional control (Pramesti & Faizah, 2022). However, many athletes still experience difficulties in stabilizing their emotions, especially during competition situations that involve high pressure (Martinent et al., 2016). Feelings of anxiety, nervousness, and tension can reduce concentration and negatively affect the quality of kata performance (Komarudin et al., 2024). This issue is particularly relevant among young athletes, whose emotional regulation abilities are still developing, making them more vulnerable to competitive pressure. As a result, athletes with strong technical skills may fail to demonstrate optimal performance due to emotional instability (Halian et al., 2022). If not addressed, this condition may negatively affect both athletic performance and self-confidence over time. Emotional stability is therefore considered a crucial factor in sports performance, as it enables athletes to remain calm, focused, and effective under stressful conditions (Matyash & Volodina, 2015). Despite the importance of psychological readiness in sports, athlete training programs continue to emphasize physical and technical aspects, while psychological training often receives less attention (Birrer & Morgan, 2009). One psychological approach that has gained increasing attention is mindfulness training, which focuses on developing present-moment awareness and emotional regulation. Previous studies have shown that mindfulness can improve concentration, reduce anxiety, and enhance psychological well-being among athletes (Sanchez-Shanchez et al., 2023). Although research on mindfulness has expanded considerably, most studies have focused on general populations or outcomes such as stress reduction, concentration, and well-being (Kabat-zinn, 2003). Similarly, studies on emotional stability have largely been conducted in non-sport contexts, such as personality and workplace performance (Shydelko, 2017). Research specifically examining the effect of mindfulness training on emotional stability among karate kata athletes remains limited, despite the unique demands of kata performance that require sustained concentration, composure, and emotional control (Yusup et al., 2025). This gap highlights the need for research investigating whether mindfulness training can effectively improve emotional stability in karate kata athletes, particularly among young athletes. Therefore, this study aims to examine the effect of mindfulness training on the emotional stability of karate kata athletes through a pretest-posttest experimental design. The novelty of this study lies in its specific focus on the relationship between mindfulness training and emotional stability in karate kata athletes, an area that has received limited attention in previous research. Unlike earlier studies that primarily examined mindfulness in general populations or other sports, this study focuses on young karate kata athletes and applies a direct mindfulness intervention to evaluate changes in emotional stability. Therefore, this research contributes both theoretically and practically to the development of psychological training strategies in karate.

METHODS

The method used in this study was a quantitative experimental approach with a one-group pretest-posttest design. This method was chosen to determine the effect of mindfulness training on the emotional stability of karate athletes in kata numbers. This study used a one-group pretest-posttest design, which involved only one experimental group. The aim was to determine the effect of mindfulness training on the emotional stability of karate athletes with a number of kata. The subjects of this study consisted of 15 karate athletes from Cimahi City, aged 8-12 years. The characteristics of these athletes were that they had 2-4 years of intensive experience

The treatment in the study consisted of mindfulness training administered to athletes over 8 sessions, conducted before training sessions, with each session lasting 20-30 minutes. Athletes were asked to sit quietly, focus on their inhaling and exhaling breaths, close their eyes and visualize performing kata perfectly, as if competing, focusing on each transition and movement. The instrument used to measure emotional stability was a questionnaire that had

been tested for validity and reliability before being administered to the research subjects. Data collection was conducted twice, namely before treatment (pretest) and after treatment (posttest). Data analysis was performed using descriptive statistics, normality tests, and homogeneity tests to ensure that the data met the assumptions of parametric testing. Furthermore, a paired sample t-test was used to determine whether there was a significant difference between pretest and posttest scores, thereby identifying the effect of mindfulness training on the emotional stability of karate athletes in kata numbers.

RESULTS AND DISCUSSION

Based on the research results, the data obtained were then analyzed to determine the effect of mindfulness training on the emotional stability of karate athletes. This analysis aims to provide a comprehensive overview of the changes that occurred before and after the mindfulness training treatment.

The results include descriptive tests, normality tests, homogeneity tests, and hypothesis testing using paired sample t-tests, processed using SPSS. The descriptive test results are shown in Table 1.

Table 1. Descriptive Test

Variable	N	Minimum	Maximum	Sum	Mean	Std. Deviation
Pretest	16	57	78	1019	63,69	5,186
Posttest	16	64	82	1118	69,87	4,470

Table 1 shows that the average pretest score was 63.69, increasing to 69.87 in the posttest. This indicates an improvement in the athletes' emotional stability after receiving mindfulness training. Furthermore, the smaller standard deviation in the posttest compared to the pretest indicates that the post-treatment data were more homogeneous or more evenly distributed. Furthermore, the results of the normality test can be seen in **Table 2.**

Table 2. Normality Test

Variable	*Shapiro-Wilk*		
	Statistic	***df***	***Sig.***
pretest	0,902	16	0,086
posttest	0,905	16	0,096

Based on **Table 2**, the pretest significance value was 0.086 and the posttest significance value was 0.096. Since both values are greater than 0.05, it can be concluded that the pretest and posttest data are normally distributed. Therefore, the data meet the requirements for parametric statistical testing. Furthermore, the results of the homogeneity test can be seen in **Table 3.**

Table 3. Homogeneity Test

		Levene Statistic	df1	df2	Sig.
Pretest-posttest	Based on Mean	0,155	1	30	0,697
	Based on Median	0,222	1	30	0,641
	Based on Median and with adjusted df	0,222	1	29,761	0,641
	Based on trimmed mean	0,181	1	30	0,674

Based on **Table 3**, a significance value of 0.697 was obtained, which is greater than 0.05. This indicates that the variance of the pretest and posttest data is homogeneous, so there is no significant difference in variance between the two data groups. Furthermore, the results of the hypothesis test can be seen in **Table 4.**

Table 4. Hypothesis Testing

		Paired Differences							Significance	
					95% Confidence Interval of the Difference					
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	One-Sided p	Two-Sided p
Pair 1	Pretest-Posttest	-6,187	1,223	0,306	-6,839	-5,536	-20,236	15	<0,001	<0,001

Based on **table 4**, a significant value (2-tailed) of less than 0.05 was obtained, i.e., <0.001. This indicates a significant difference between the pretest and posttest scores. Therefore, it can be concluded that mindfulness training significantly improves the emotional stability of karate athletes with kata numbers. Furthermore, the percentages can be seen in **Figure 1.**

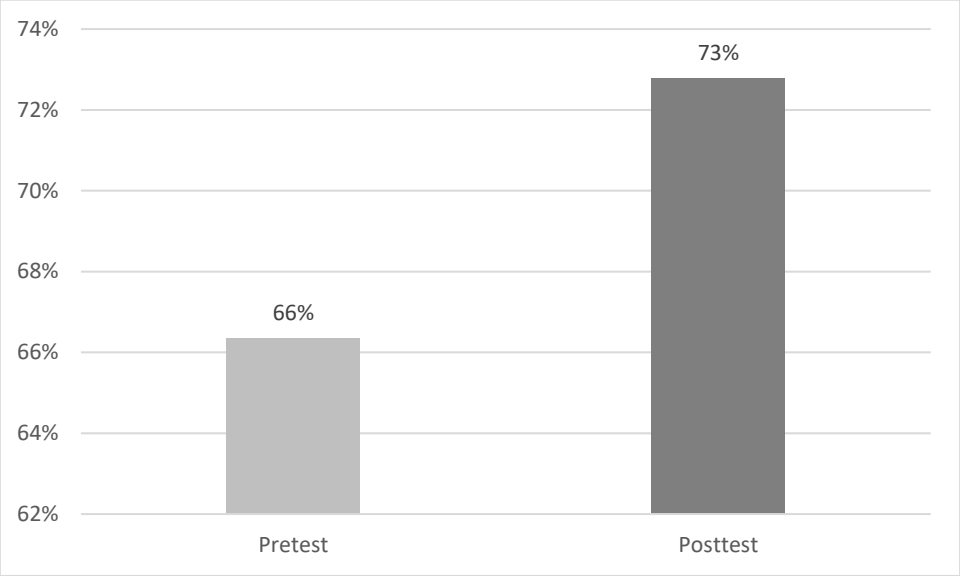

Figure 1. Percentage of Emotional Stability Ability of Karate Athletes Number of Kata Before and After Being Given Mindfulness Training

Figure 1 shows a 7% increase in athletes' emotional stability, from 66% to 73% after mindfulness training compared to before treatment. This confirms the significant effect of mindfulness training on the emotional stability of karate athletes in kata.

The results of the study showed a significant effect of mindfulness training on improving the emotional stability of karate athletes in kata, as indicated by a significant difference between pretest and posttest scores. This indicates that mindfulness training is effective in helping athletes manage emotions, improve focus, and maintain composure when facing competition pressure (Desai, 2016).

Theoretically, this influence can be explained through the working mechanism of mindfulness, which focuses on increasing self-awareness and emotional regulation (Garland et al., 2017). Mindfulness practice trains individuals to be aware of their thoughts, feelings, and bodily sensations without judgment, thus preventing them from reacting impulsively to stressful situations (Kaur, 2024).

This process allows athletes to respond to pressure more adaptively, rather than reactively, thus maintaining emotional stability (Murat Ozan, 2022). In sports, increasing emotional stability through mindfulness training is also associated with reduced anxiety and increased self-control in athletes (Zhong et al., 2024). This is in line with research (Wang et al., 2023). which states that mindfulness interventions significantly improve athlete performance through mechanisms of emotion regulation and stress reduction.

Furthermore, in karate kata, emotional stability is a crucial factor because this discipline demands precise movements, rhythm, and a high level of appreciation (Khan, 2022). When athletes are able to control their emotions, they can concentrate more effectively, resulting in improved performance (Novandalina, 2021). Conversely, emotional instability can disrupt focus and lead to decreased movement quality during competition (Komarudin et al., 2024; Sabato et al., 2016).

From a sports psychology perspective, the influence of mindfulness can be explained through attention control theory, which suggests that anxiety can disrupt an individual's attentional system (Isnarizanah & Nursaba, 2025; Minnick et al., 2020). Mindfulness training helps athletes redirect attention to the task at hand, enabling them to maintain focus in competitive situations (Röthlin, 2016). Therefore, the increased emotional stability in this study resulted from athletes' increased ability to manage attention and psychological stress.

When compared with previous research, the results of this study are consistent with various studies showing that mindfulness has a positive impact on psychological aspects and athlete performance. Research (Mojtahe et al., 2023). also showed that mindfulness contributes to improving focus and reducing stress levels in athletes. The increase in emotional stability in this study was also influenced by the characteristics of the subjects, who were athletes aged 8-12 years, whose emotional development is still in the formative stage.

At this stage, psychological interventions such as mindfulness tend to be more effective because emotional regulation skills are still developing. Furthermore, the duration and consistency of the training are also important factors in the intervention's success. Repeated training allows for psychological adaptation, which leads to gradual improvement in emotional control (Gru et al., 2022).

From the researchers' perspective, the success of the mindfulness training in this study was also influenced by the combination of breathing exercises and structured visualization of kata movements. This visualization helped athletes develop a mental image of optimal performance, thereby enhancing psychological readiness for competition. Furthermore, this approach strengthened the connection between cognitive and motor aspects that contribute to athletic performance

However, despite the study's findings showing a significant effect, several limitations warrant consideration. The lack of controls in the study design allows for the influence of uncontrolled external factors. Furthermore, the relatively small sample size also limits the generalizability of the study results to a broader population (Firmansyah, 2022). Therefore, the integration of mental exercises such as mindfulness into sports training programs is highly recommended, particularly in sports that require high levels of concentration and emotional control, such as karate kata (Yusup et al., 2025).

CONCLUSION

Based on the research results, it can be concluded that mindfulness training significantly improved the emotional stability of karate kata athletes. This is evident in the clear difference between pre- and post-treatment scores, indicating an improvement in emotional management skills after the training. Mindfulness training helps athletes become more focused, calm, and able to control their emotional responses under pressure, particularly during competitions. With increased emotional stability, athletes are also able to perform kata movements more optimally and with more control. These findings suggest that psychological aspects, particularly through mental training such as mindfulness, play a crucial role in supporting successful athlete performance.

Furthermore, the results of this study confirm that integrating mindfulness training into athlete training programs, especially at a young age, is essential for supporting the development of emotional regulation skills. Consistent implementation of the training can help athletes gradually build better mental readiness. Based on the findings of this study, mindfulness training is recommended to be conducted 2–3 times per week for approximately 20–30 minutes per session before regular training activities to maximize its benefits for emotional regulation and mental readiness. However, this study still has limitations, such as the relatively small sample size (15 athletes) and the absence of a control group, making the results less generalizable.

Therefore, future research is recommended to use a more complex design, include a control group, and involve a larger number of subjects. Overall, mindfulness can be used as an effective strategy to improve the emotional stability and performance of karate athletes in kata numbers.

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