INTEGRATING MINDFULNESS-BASED EDUCATION TO REDUCE ANXIETY DISORDERS AMONG ADOLESCENT PENCAK SILAT ATHLETES: A QUASI-EXPERIMENTAL STUDY

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ABSTRACT
Anxiety disorders represent one of the most prevalent mental health challenges globally, with athletes—especially those in high-pressure sports such as pencak silat—facing unique vulnerabilities due to the intense physical, psychological, and cultural demands of competition. This study aimed to evaluate the effectiveness of mindfulness-based interventions in reducing anxiety disorder symptoms among adolescent pencak silat athletes at Cempaka Putih Ranting Jombang, Indonesia. Employing a quasi-experimental, one-group time series design, the research involved seven athletes who underwent a structured mindfulness program delivered over three weeks. Data were collected through validated self-report questionnaires (BAI and SCAT) and qualitative interviews, measured at four pre- and four post-intervention points. The results demonstrated a statistically significant reduction in anxiety symptoms across cognitive, emotional, somatic, and behavioral domains, with athletes reporting increased self-regulation, improved emotional stability, and enhanced overall well-being. The findings highlight the substantial benefits of integrating mindfulness practices into athlete training routines, especially in culturally rooted martial arts environments where traditional mental health resources may be limited or stigmatized. This research contributes to the literature by providing robust, contextually grounded evidence of mindfulness efficacy for adolescent martial artists—a group largely underrepresented in sports psychology research. For practical implementation, sports organizations and coaches are encouraged to incorporate mindfulness strategies within athlete development programs to support psychological resilience and performance. Future research should employ larger samples, randomized controlled designs, and extended follow-up periods to assess the long-term effects and broader applicability of mindfulness interventions in diverse athletic and cultural contexts.

Keywords: adolescent athletes, anxiety disorder, intervention, mindfulness, *pencak silat*

INTRODUCTION

Anxiety disorders are among the most prevalent mental health conditions globally, affecting approximately 264 million individuals according to the World Health Organization (WHO, 2021). The burden of anxiety disorders is reflected in their significant impact on quality of life, productivity, and overall well-being, leading to both physical and psychological complications such as sleep disturbances, impaired concentration, increased risk of depression, and a general decline in mental health (Bandelow & Michaelis, 2015; Baxter et al., 2014). In the competitive world of sports, athletes are particularly susceptible to anxiety due to the high-pressure environments of training, competition, and performance evaluation (Rice et al., 2016). This vulnerability is further heightened in martial arts disciplines such as pencak silat, where mental strength, focus, and self-control are as crucial as physical prowess (Gardner & Moore, 2004). Athletes' exposure to stressors such as fear of failure, performance expectations, traumatic past experiences, and negative self-talk often manifest as heightened levels of anxiety, which may ultimately impair performance and overall functioning (Birrer et al., 2012; Röthlin et al., 2016). Pencak silat, a traditional Indonesian martial art rooted in both cultural and physical traditions, is characterized by intense physical demands and psychological stress, particularly in adolescent athletes navigating formative years (Kerr & Stirling, 2012;

Parnabas et al., 2014). Observations from Cempaka Putih Silat Club in Jombang reveal that athletes frequently experience performance anxiety, fear of losing, pre-competition panic, and the lingering effects of past failures—factors that can undermine confidence and hinder optimal athletic achievement. The increasing recognition of mental health challenges among athletes has prompted an urgent call for effective interventions that address not only physical preparation but also psychological resilience (Purcell et al., 2019; Gouttebarge et al., 2019). Conventional approaches have often prioritized physical training and technical skill, but recent advances underscore the need for holistic strategies that integrate psychological well-being, especially interventions that foster self-awareness, emotional regulation, and stress management (Vealey & Chase, 2016; Wadey & Hanton, 2008).

Despite advances in sports psychology, anxiety disorders continue to be underdiagnosed and undertreated among athletes, primarily due to stigma, lack of awareness, and inadequate access to mental health resources (Gulliver et al., 2012; Reardon et al., 2019). The main research problem thus centers on the high prevalence of anxiety disorders among pencak silat athletes and the lack of accessible, effective, and culturally sensitive interventions that can be integrated into their daily routines. General solutions often proposed in the literature include cognitive-behavioral therapy (CBT), pharmacological treatment, and psychoeducation (Richardson et al., 2008; Newman et al., 2013). However, these methods may not always be feasible or culturally acceptable in the context of Indonesian martial arts, where holistic approaches aligned with traditional values are more likely to gain acceptance (Simons & Gaher, 2005). As such, non-pharmacological interventions that promote self-regulation, mindfulness, and resilience have gained prominence for their accessibility, adaptability, and compatibility with athletes' routines (Birrer et al., 2012; Josefsson et al., 2014).

A promising approach emerging from scientific literature is the application of mindfulness-based interventions (MBIs), which have demonstrated efficacy in reducing anxiety and enhancing psychological flexibility among athletes (Gardner & Moore, 2012; Gross et al., 2018). Mindfulness, defined as the practice of non-judgmental awareness of the present moment, encourages athletes to observe their thoughts and emotions without attachment or aversion, thereby mitigating the cognitive and emotional spirals associated with anxiety (Kabat-Zinn, 2003; Shapiro et al., 2006). Several meta-analyses and controlled trials have documented the benefits of mindfulness in improving athletes' mental health, reducing anxiety, and enhancing performance under pressure (Li et al., 2019; Bostock et al., 2019). For example, Josefsson et al. (2014) highlighted that MBIs lead to significant reductions in both state and trait anxiety among athletes, while Thompson et al. (2011) reported improvements in attentional control, emotional regulation, and coping skills. These findings are echoed by Röthlin et al. (2016), who found that mindfulness training decreased anxiety symptoms and improved psychological well-being in elite athletes. Furthermore, the effectiveness of mindfulness interventions is supported in a range of cultural and sporting contexts. De Petrillo et al. (2009) observed that MBIs contributed to reduced anxiety and increased sport performance among collegiate athletes, while Parnabas et al. (2014) specifically identified the positive impact of mindfulness in reducing competitive anxiety among pencak silat athletes in Malaysia. The adaptability of mindfulness techniques, such as mindful breathing, body scan, and acceptance-based exercises, renders them particularly suitable for integration into sports training regimens (Baltzell & Akhtar, 2014; Segal et al., 2018).

While the efficacy of mindfulness-based interventions in reducing anxiety is well-documented, several gaps remain in the literature, especially regarding their application in traditional Indonesian martial arts settings. Most existing studies have been conducted in Western contexts or among athletes from mainstream sports, with limited exploration of MBIs in culturally specific practices such as pencak silat (Josefsson et al., 2014; Röthlin et al., 2016; Baltzell & Summers, 2018). Additionally, research on adolescent athletes in Southeast Asia, particularly in Indonesia, is scarce. The unique stressors faced by pencak silat athletes—rooted in cultural expectations, community pride, and ritualistic elements—necessitate interventions

tailored to their lived experiences (Kerr & Stirling, 2012; Parnabas et al., 2014). While Parnabas et al. (2014) initiated explorations into competitive anxiety among pencak silat athletes, their studies did not systematically evaluate the efficacy of mindfulness interventions using rigorous experimental designs. Moreover, despite evidence supporting mindfulness for anxiety reduction in athletes (Gardner & Moore, 2012; Li et al., 2019), the mechanisms through which mindfulness alleviates anxiety—such as enhanced emotional regulation, decreased rumination, and improved present-moment focus—have yet to be systematically investigated among pencak silat athletes (Gross et al., 2018; Bostock et al., 2019). This gap is further compounded by the lack of longitudinal and experimental research assessing the sustained impact of mindfulness interventions within the specific socio-cultural milieu of Indonesian pencak silat communities. Thus, there is a pressing need for experimental studies that not only evaluate the effectiveness of mindfulness techniques in reducing anxiety among pencak silat athletes but also elucidate the processes and contextual factors that mediate these outcomes (Vealey & Chase, 2016; Shapiro et al., 2006).

The primary objective of this study is to examine the effectiveness of mindfulness techniques in reducing anxiety disorder among adolescent pencak silat athletes at Cempaka Putih Ranting Jombang, Indonesia, employing a quasi-experimental design. This research specifically seeks to evaluate the levels of anxiety before and after the implementation of mindfulness training, identify changes in emotional regulation and cognitive patterns as potential mediators for anxiety reduction, and explore athletes' subjective experiences related to the practice of mindfulness within the unique context of pencak silat training. This study is distinguished by its novelty, as it focuses on pencak silat athletes—a population that remains largely underrepresented in both mindfulness and sports psychology literature. Unlike most previous research that predominantly addresses mainstream sports or Western contexts, this study integrates mindfulness-based interventions within the traditional and cultural framework of Indonesian martial arts. Such an approach provides a contextually grounded perspective that is rarely documented in existing scholarly works. Furthermore, the use of a time-series quasi-experimental design adds methodological strength to this research by offering robust evidence regarding the temporal effects and sustainability of mindfulness training in reducing anxiety among athletes in real-world and culturally specific settings. The justification for the research hypothesis is rooted in a substantial body of theoretical and empirical literature, which suggests that mindfulness techniques can significantly alleviate anxiety symptoms among athletes by enhancing present-moment awareness and emotional regulation (Gardner & Moore, 2012; Gross et al., 2018; Li et al., 2019). This hypothesis is further supported by accumulating evidence that demonstrates the efficacy of mindfulness not only among athletes but also in various non-athletic populations, as well as by preliminary findings indicating its applicability in martial arts contexts (Baltzell & Akhtar, 2014; Röthlin et al., 2016). The scope of this study is specifically confined to adolescent athletes from the Cempaka Putih Silat Club in Jombang, who will participate in structured mindfulness training sessions. The effectiveness of the intervention will be measured using validated psychological instruments for anxiety assessment and supplemented by qualitative interviews to capture subjective experiences. It is important to note that the findings of this study are delimited to the context of pencak silat and adolescent athletes, and therefore may not be directly generalizable to other sports disciplines or age groups.

METHOD

Research Design

This study employed a quasi-experimental research method with a one-group time series design. Quasi-experimental designs are widely used when random assignment to treatment and control groups is not feasible, allowing researchers to estimate causal effects despite the absence of full experimental control (Cook & Campbell, 1979; Shadish, Cook, & Campbell, 2002). In this research, a single group of participants (the experimental group) was observed repeatedly both before and after the intervention, without the use of a separate control group. The one-group time series design involved eight measurements:

four pre-treatment (pre-test) assessments and four post-treatment (post-test) assessments, capturing the dynamic changes in anxiety levels over the course of the intervention (Harris et al., 2006; Creswell & Creswell, 2017). The treatment consisted of mindfulness techniques focusing on meditation and relaxation, delivered twice a week for three weeks. Each session followed the "STOP, Take a Breath, Observe (Body Scan), and Proceed" protocol, a structured mindfulness routine proven effective in reducing anxiety and improving emotional regulation (Kabat-Zinn, 2003; Garland et al., 2015).

Table 1. Diagram of Research Flow

Phase	Activity
PRE TEST	Baseline measurement 1, 2, 3, 4
TREATMENT 1	STOP, Take a Breath, Observe, Body Scan, Proceed; POST TEST 1
TREATMENT 2	STOP, Take a Breath, Observe, Body Scan, Proceed; POST TEST 2
TREATMENT 3	STOP, Take a Breath, Observe, Body Scan, Proceed; POST TEST 3
TREATMENT 4	STOP, Take a Breath, Observe, Body Scan, Proceed; POST TEST 4

This design enabled researchers to examine the direct impact of mindfulness intervention by comparing pre-test and post-test results, thereby assessing its effectiveness in reducing anxiety disorder among pencak silat athletes.

Population and Sample

The population for this study comprised all athletes of the Cempaka Putih pencak silat club in Jombang. According to Sugiyono (2014), a population is the entire group of individuals or objects with common characteristics that are the focus of a study (Fink, 2013). The sample was selected using purposive sampling, a non-probability technique where participants are chosen based on specific criteria relevant to the research objectives (Palinkas et al., 2015; Etikan, Musa, & Alkassim, 2016). The inclusion criteria were athletes who (1) were active members of the Cempaka Putih pencak silat club, (2) experienced symptoms of anxiety disorder as determined by screening questionnaires, and (3) provided informed consent. Ultimately, seven athletes meeting these criteria were enrolled as study participants. The site selection was based on: (a) the researcher's familiarity with the location, (b) the absence of previous similar research at the site, and (c) the willingness of the club to participate.

Research Procedures

The research process was conducted through several systematic stages to ensure the rigor and validity of the study. The first stage was planning, which involved identifying the research problem, setting the objectives, designing the research framework, determining the target population and sample, selecting appropriate instruments, drafting the timeline, and formulating the data analysis plan (Creswell & Creswell, 2017). Following this, the preparation stage encompassed an in-depth literature review, development of research questions, selection of measurement tools, and preparation of a detailed research schedule. In the observation phase, the researcher directly observed anxiety-related issues among pencak silat athletes prior to any intervention, thereby establishing critical baseline data. This was followed by the pre-test phase, where anxiety questionnaires were administered on four separate occasions to capture comprehensive baseline measurements of anxiety levels. The intervention or treatment phase consisted of the implementation of mindfulness-based practices over six sessions across three weeks. Each session included guided meditation, mindful breathing, and body scanning, which have been demonstrated to enhance self-regulation and reduce anxiety in sports settings (Gardner & Moore, 2004; Thompson et al., 2011; Li et al., 2019). After each intervention session, the same anxiety questionnaires were administered as post-tests,

allowing for the evaluation of both immediate and cumulative effects of the treatment. The subsequent data analysis stage involved compiling and statistically analyzing pre-test and post-test scores using the Wilcoxon Signed Rank Test, a non-parametric method appropriate for small paired samples (Field, 2013; Ghasemi & Zahediasl, 2012). Results were then interpreted to determine the significance and magnitude of anxiety reduction observed in the participants. Finally, the research concluded with drawing key findings and discussing their practical implications for anxiety management in pencak silat athletes.

Mindfulness Intervention Protocol

The mindfulness intervention in this study was structured using the STOP protocol, a practical and accessible framework designed to cultivate present-moment awareness and emotional regulation. Each session began with the step "S," which encouraged participants to stop whatever they were doing, allowing for a conscious pause from ongoing activities or thoughts. The next step, "T," involved taking a deep breath and directing attention to the natural rhythm of breathing, fostering a sense of calm and grounding. Following this, "O" prompted participants to observe their body and mind, systematically scanning for any sensations, emotions, or thoughts that were present, thus cultivating non-judgmental awareness. Finally, "P" encouraged proceeding with increased awareness and acceptance, empowering athletes to continue their activities with a more mindful and open attitude. This protocol was adapted from Kabat-Zinn's Mindfulness-Based Stress Reduction (MBSR), a widely validated approach shown to enhance psychological well-being and significantly reduce anxiety (Kabat-Zinn, 2003; de Vibe et al., 2012; Shapiro et al., 2006). Each mindfulness session lasted between 30 to 45 minutes and was guided by a trained instructor, ensuring that participants received consistent and supportive facilitation throughout the intervention process.

Data Collection Instruments & Data Analysis

The measurement of anxiety levels in this study was conducted using standardized and validated self-report instruments, specifically the Beck Anxiety Inventory (BAI) and the Sport Competition Anxiety Test (SCAT), both of which have been extensively utilized and recognized for their strong psychometric properties in the field of sport psychology (Beck et al., 1988; Martens et al., 1990). These quantitative measures provided reliable assessments of the athletes' anxiety before and after the mindfulness intervention. In addition to the quantitative data, qualitative feedback was gathered through structured interviews, allowing for an in-depth exploration of participants' subjective experiences with the mindfulness sessions and offering a richer understanding of the intervention's impact (Smith & Sparkes, 2016).

All data collected were systematically organized and prepared for analysis to evaluate the effectiveness of the mindfulness intervention. The primary quantitative analysis employed was the Wilcoxon Signed Rank Test, a non-parametric statistical method that is appropriate for comparing two related samples—specifically, the pre- and post-intervention anxiety scores—without the assumption of normal data distribution (Ghasemi & Zahediasl, 2012; Field, 2013). This test was chosen to assess whether the reduction in anxiety levels observed following the intervention was statistically significant.

The analysis process entailed several key steps: first, the calculation of descriptive statistics to summarize all pre-test and post-test scores; second, the application of the Wilcoxon Signed Rank Test to determine the significance of any observed changes; and finally, the interpretation of qualitative feedback gathered from participant interviews to provide contextual depth and meaning to the quantitative findings (Braun & Clarke, 2006). Through this combined approach, the study sought to offer both statistical rigor and experiential insight into the impact of mindfulness techniques on anxiety among pencak silat athletes.

RESULTS AND DISCUSSION

Baseline Condition: Pre-Intervention Anxiety Among Pencak Silat Athletes

The baseline assessment of pencak silat athletes at Cempaka Putih club revealed high levels of anxiety disorder symptoms across several psychological and physiological dimensions. The quantitative results from the Beck Anxiety Inventory (BAI) and the Sport Competition Anxiety Test (SCAT) reflected moderate to severe anxiety before the mindfulness intervention, consistent across all seven participants.

Table 2. Pre-Intervention Anxiety Symptom Prevalence

Indicator	Example Statement	Prevalence (%)
Worry	"I constantly worry about the future and competitions."	100
Restlessness	"I feel restless all the time, as if something bad will happen."	85.7
Panic	"I panic before matches."	71.4
Muscle Tension	"My muscles feel tense and I cannot relax."	100
Sleep Disturbance	"I have trouble sleeping before competitions."	85.7
Unhealthy Eating	"I lose appetite or overeat when anxious."	57.1
Concentration Problems	"It's hard to focus on training instructions."	71.4

Source: Structured interviews and standardized questionnaires (Beck et al., 1988; Martens et al., 1990).

Consistently, the highest prevalence was seen in symptoms related to worry and muscle tension, both of which have been associated with performance decrements and increased risk of injury among athletes (Rice et al., 2016; Röthlin et al., 2016). In qualitative interviews, athletes expressed an ongoing fear of underperforming, anxiety about injuries, and social pressure from coaches and families—anxiety triggers well-documented in competitive sports literature (Purcell et al., 2019; Gulliver et al., 2012).

Athletes' narratives revealed several recurring themes: fear of letting others down, excessive rumination about possible mistakes, and an inability to sleep before major events. These findings align with research highlighting the unique social-psychological stressors faced by athletes in collectivist cultures, where group expectations are high (Parnabas et al., 2014; Gouttebarge et al., 2019). "Every time I enter a tournament, I can't stop worrying about my performance, my family's hopes, and the fear of failing in front of everyone." —Participant A. Such self-reported experiences are not unique to Indonesian pencak silat athletes. Elite athletes worldwide report anxiety stemming from similar internal and external pressures, confirming the need for effective interventions (Gardner & Moore, 2012; Li et al., 2019).

The Mindfulness Intervention: Process and Fidelity

The intervention consisted of six group-based mindfulness sessions, each 30-45 minutes long, delivered over three weeks. Sessions followed the STOP protocol (Stop, Take a Breath, Observe, Proceed), a format derived from Kabat-Zinn's Mindfulness-Based Stress Reduction (MBSR) (Kabat-Zinn, 2003; de Vibe et al., 2012). All sessions were conducted by a certified mindfulness instructor, with full attendance and high engagement reported. Between-group sessions, athletes were encouraged to independently practice breathing, body scans, and mindful attention, fostering skill generalization. Athletes reported initial skepticism about the utility of mindfulness but described growing acceptance and enthusiasm as they noticed immediate benefits, particularly increased calmness and improved focus during practice. The inclusion of culturally familiar analogies and metaphors helped bridge gaps between traditional pencak silat values and contemporary psychological techniques (Baltzell & Akhtar, 2014; Josefsson et al., 2014).

Post-Intervention: Quantitative and Qualitative Results

A Wilcoxon Signed Rank Test confirmed the reduction in anxiety scores was statistically significant ($Z = -2.366$, $p < 0.05$), indicating a robust treatment effect (Ghasemi & Zahediasl, 2012; Field, 2013). The trend line (see Figure 1) reveals a steady decline in both BAI and SCAT scores, demonstrating that the intervention's impact was sustained and cumulative.

Table 3. Pre- and Post-Intervention Anxiety Scores

Measurement Point	Mean BAI Score	Mean SCAT Score
Pre-Test 1	27.5	22.8
Pre-Test 2	28.2	23.0
Pre-Test 3	26.8	22.2
Pre-Test 4	27.1	23.1
Post-Test 1	18.5	15.2
Post-Test 2	16.3	14.7
Post-Test 3	15.8	13.5
Post-Test 4	14.5	13.0

Analysis of post-intervention questionnaire data revealed substantial improvements across all domains of anxiety among the athletes. Cognitively, participants reported a significant decrease in intrusive worries and negative rumination, indicating an enhanced ability to manage and redirect their thoughts away from anxiety-provoking scenarios. Emotionally, the athletes experienced fewer episodes of panic and demonstrated greater emotional stability, as evidenced by their improved ability to cope with stressful situations. Somatically, there was a notable reduction in muscle tension, improved sleep quality, and fewer physical complaints such as headaches and digestive issues, highlighting the beneficial effects of mindfulness on the body's stress response. Behaviorally, the athletes exhibited healthier eating patterns, increased attention and concentration during training, and a marked reduction in avoidance behaviors. These findings were reinforced by qualitative interviews, where athletes described feeling more in control of their reactions to stress, utilizing mindfulness techniques to "pause and breathe" before responding, and maintaining a more positive and balanced outlook in both training and competitive environments. As one athlete expressed, "Now, I don't let anxiety ruin my focus. I know how to ground myself and stay present," underscoring the transformative impact of the mindfulness intervention on both psychological and behavioral functioning.

Efficacy of Mindfulness-Based Interventions

Numerous meta-analyses confirm the benefits of MBIs for reducing anxiety in both clinical and non-clinical populations (Khoury et al., 2013; Bostock et al., 2019; Li et al., 2019). Specifically, Gardner and Moore (2012) and Röthlin et al. (2016) found that mindfulness approaches significantly improve emotional regulation, attentional control, and overall well-being among athletes.

Table 4. Key International Studies Supporting Mindfulness for Anxiety in Athletes

Study	Population	Intervention	Key Findings
Khoury et al. (2013)	Mixed populations	MBSR/MBCT	Meta-analysis: significant anxiety reduction
Li et al. (2019)	Athletes (meta)	Mindfulness	Reductions in anxiety, improved performance

Study	Population	Intervention	Key Findings
Gardner & Moore (2012)	Athletes	MAC approach	Improved focus, reduced anxiety, performance
De Petrillo et al. (2009)	Collegiate athletes	Mindfulness	Lower anxiety, better coping with stress
Röthlin et al. (2016)	Elite athletes	Mindfulness	Decreased state and trait anxiety
Baltzell & Akhtar (2014)	Sports participants	MSPE	Improved resilience, focus, anxiety management
Birrer et al. (2012)	Athletes	Mindfulness	Enhanced self-regulation, reduced anxiety
Parnabas et al. (2014)	Martial artists	Mindfulness	Lowered pre-competition anxiety
Gross et al. (2018)	Female athletes	MAC, PST	Reduced anxiety, improved mental health
Thompson et al. (2011)	Archers, golfers	MSPE	Anxiety reductions, sustained over 1 year

Parnabas et al. (2014) and Birrer et al. (2012) highlighted that martial artists benefit significantly from mindfulness, especially in managing pre-competition anxiety. Baltzell and Summers (2018) emphasize the flexibility of mindfulness for different cultural and sport-specific contexts, which this study further supports through its Indonesian focus.

Methodological Differences, Cultural Context and Adaptation

Unlike many previous studies that use larger, randomized controlled trials (RCTs) (Gross et al., 2018; Khoury et al., 2013), this research utilized a one-group time series design with a small, targeted sample. Despite these constraints, the robust statistical results and triangulation of qualitative data provide credibility and address the feasibility of implementing such interventions in resource-limited or community-based settings (Shadish et al., 2002; Harris et al., 2006). A unique contribution of this study is its demonstration of mindfulness's adaptability to a highly traditional, communal martial arts environment in Indonesia. International literature often points to cultural differences as a barrier to intervention efficacy (Josefsson et al., 2014). Here, the STOP protocol was adapted to respect local values, and athletes responded positively, supporting the broader applicability of MBIs.

Theoretical and Practical Implications

This study adds to the growing body of work that situates mindfulness as a critical tool for athletic mental health and performance (Gardner & Moore, 2012; Röthlin et al., 2016; Li et al., 2019). The multidimensional improvements observed—cognitive, emotional, somatic, and behavioral—support theories of mind-body integration in both Western and non-Western sports psychology literature (Shapiro et al., 2006; Zeidan et al., 2010). Implementing mindfulness interventions in the everyday routines of athletes, especially in environments where psychological resources are scarce or stigmatized, can provide a low-cost, effective strategy for mental health promotion (Baltzell & Summers, 2018; Gouttebarge et al., 2019). The STOP protocol, by being simple, culturally sensitive, and easy to learn, stands as a model for future sports mental health programs. Athletes who learn to regulate anxiety and remain present under pressure are not only more successful in competition, but also acquire life skills that foster resilience, adaptability, and well-being beyond sports (Gross et al., 2018; Baltzell & Summers, 2018).

CONCLUSION

The primary objective of this study was to examine the effectiveness of mindfulness techniques in reducing anxiety disorder symptoms among adolescent pencak silat athletes at Cempaka Putih Ranting Jombang, Indonesia, using a quasi-experimental, time-series design. The core findings revealed a significant reduction in anxiety levels, as demonstrated by both quantitative (BAI and SCAT scores) and qualitative data, with athletes reporting improvements across cognitive, emotional, somatic, and behavioral domains. This research contributes to the field by providing robust, contextually grounded evidence that mindfulness-based interventions—when adapted to local culture and athletic routines—can serve as a practical, accessible solution for anxiety management in traditional martial arts settings. Moreover, it fills a notable gap in the literature by systematically documenting the efficacy of mindfulness in an underrepresented athlete population, highlighting the importance of culturally sensitive psychological interventions and offering a replicable model for integrating mental health strategies into sports training programs for Indonesian youth and beyond.

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