

Examining anxiety levels and self-efficacy in Pencak Silat athletes: A comparative study

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ABSTRACT



Background Problems: Anxious athletes often doubt their ability to manage stress and achieve goals. Developing self-efficacy is vital as it enhances performance and confidence while reducing stress. There is a research gap in exploring the relationship and differences between self-efficacy and pre-competitive anxiety across athletes in sports with varying characteristics. **Research Objectives:** Considering the lack of research on self-efficacy in Pencak Silat, this study aims to deepen understanding of how self-efficacy impacts performance, particularly when comparing individual and team categories in Pencak Silat. **Methods:** Sample selection used the Purposive Sampling technique, with criteria including individual and team categories in Pencak Silat consisting of 30 athletes, including 15 individual and 15 team categories from Pencak Silat PON Jawa Barat and PAL Kota Bandung athletes. The research design used is a correlation and comparative study, with data collection employing a quantitative method. The measurement tools used were the CSAI-2R and the GSES. The data were analysed using correlation tests to measure the relationship between anxiety levels and self-efficacy, and independent sample t-tests were used to compare differences between the two groups in terms of anxiety and self-efficacy level. **Finding and Results:** The results of the correlation test show that there is a relationship between anxiety and self-efficacy with the Pearson value for teams (-0.532) and individuals (0.771), and the results of the hypothesis show a significant difference between the two categories ($0.001 < 0.05$). **Conclusion:** The study found significant differences in anxiety and self-efficacy between individual and team pencak silat athletes, emphasising the need for tailored psychological approaches to enhance performance. Future research could explore targeted mental training programmes, track changes over time, or examine other martial arts or athlete groups for deeper insights.

Keywords: Anxiety; self efficacy; pencak silat; individual categories; team categories

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INTRODUCTION

Performance outcomes in sports are strongly influenced by psychological factors, emphasising the role of sports psychology in understanding athletes' behaviour and mental health from a scientific perspective (Liu et

al., 2024; Martinent et al., 2015). For athletes to consistently perform at their peak during competitions, their support teams must prioritise and enhance mental health, as it directly influences competitive success (Haryanto et al., 2024). To achieve peak performance in competitions, athletes' support teams must prioritise mental health, as it directly impacts success (Rogers et al., 2024). Positive psychology focuses on enhancing individual well-being by promoting psychological health (Lambert et al., 2015). Increased psychological well-being reduces negative emotional and physical states, fostering a better training environment and improving performance (Gómez-López et al., 2023). Despite the increasing focus on mental health in professional sports, research on traditional sports like Pencak Silat remains scarce, particularly regarding psychological differences between team and individual athletes. A study comparing Pencak Silat and boxing athletes revealed differences in self-confidence and anxiety control, emphasising the need for further exploration of traditional sports that integrate cultural and social elements (Dongoran et al., 2019).

In this situation, psychological well-being is explained through changes in the way we understand psychological concepts such as self-esteem, perceived self-efficacy, positive affect, and dispositional optimism. as a concept that has stability both physically and psychologically (Golby & Wood, 2016; Hermawansyah et al., 2021). Moderate levels of anxiety can motivate athletes and enhance preparation, this means that because anxiety directly affects athletes, whether in a favourable or negative way, it becomes a fascinating construct to examine (Mangolo et al., 2021). Sports psychology aims to understand emotional stabilisation, including states like tension, fear, and competitive anxiety (Martinent et al., 2015). One of the main goals in evaluating and preparing athletes' mental state is competitive anxiety, an emotional condition that tends to be negative and can result in significant performance deterioration under pressure if not managed effectively (Tossici et al., 2024).

In sports psychology, anxiety, characterised by feelings of frustration, lack of confidence, or fear of failure, has been widely studied to understand its impact on athletes' performance (Arruda et al., 2014; Castillo-rodríguez et al., 2022). Several theoretical models have emerged from studies on the relationship between sports performance and anxiety to investigate the various types of anxiety that athletes might experience (Rubio et al., 2022). The Multidimensional Anxiety Model is one of the most well-established theories in the study of competitive anxiety, it breaks down competitive anxiety into three primary components: cognitive anxiety, somatic anxiety, and self-confidence (Pineda-Espejel et al., 2021). Research also indicates that cognitive appraisal plays a pivotal role in influencing how competitive anxiety affects performance (Yang et al., 2024). Research has indicated that these emotions can arise in pre-competitive situations (Martinent & Ferrand, 2015). The concept of pre-competitive anxiety emerges, which has the potential to have both positive and negative impacts on athletes (Şekeroğlu, 2019). Pre-competition anxiety can vary in its effects, sometimes enhancing performance (Mercader-Rubio & Ángel, 2023).

Pre-competition anxiety significantly affects self-efficacy, a core element of social cognitive theory that encompasses individuals' belief in their ability to successfully perform tasks or achieve goals, ultimately influencing overall performance and personal development (Basileo et al., 2024; Si et al., 2024). This belief is particularly important in the context of sports, where it influences how athletes approach challenges and enhancing self-efficacy can positively affect performance, and the strong correlation between self-efficacy and athletic performance has important practical implications (Lochbaum et al., 2023). Athletes with high self-efficacy are more likely to aim higher, work harder, and persevere through challenges (Guzman Villegas-Frei et al., 2024).

The relationship between an individual's self-efficacy and performance has been the subject of numerous research studies; however, the relationship between a group's collective confidence and performance is relatively new, as we are frequently faced with teams that are made up of talented individuals but perform poorly. Conversely, some teams exceed expectations, often characterised by a strong sense of unity that surpasses individual talent (Ganotice et al., 2022). Self-efficacy has consistently been shown to positively impact performance across various team and individual sports (Lochbaum et al., 2022). On previous research shows that there are differences in anxiety levels between individual athletes and teams, where individual athletes have much higher levels of competitive anxiety compared to team athletes (Kemarlat et al., 2022). This is consistent with previous studies, which highlights the lack of studies investigating the relationship and

comparing the differences between self-efficacy and pre-competitive anxiety among athletes in sports with distinct characteristics (Amar et al., 2023).

Therefore, the purpose of this study is to investigate the relationship between self-efficacy and pre-competition anxiety using a sample that includes both team and individual categories in Pencak Silat, which has varied characteristics within the sport. Athletes in teams may experience different anxiety levels compared to individuals, as individual sport competitors often report higher pre-competition anxiety (Legesse, 2016). Furthermore, self-efficacy may vary depending on the dynamics of team and individual competition, with team athletes possibly benefiting from support from their teammates, as in team sports, the performance of the group relies not only on individual abilities but also on the relationships and group processes, such as coordination and collaboration (Li et al., 2020). Studies show that martial artists' self-efficacy is crucial for both psychological health and performance, with higher self-efficacy linked to better emotional control and reduced aggression in martial arts practitioners, such as those in judo or karate (Potoczny et al., 2022).

Self-efficacy is essential in Pencak Silat, a sport requiring both physical and mental endurance for success. It enhances athletes' confidence and competitive performance. This study fills a gap in sports psychology by exploring the relationship between self-efficacy and pre-competition anxiety in Pencak Silat, while comparing team and individual dynamics to provide insights applicable to various sports globally. Although self-efficacy in individual and team sports has been studied, its dynamics in traditional martial arts like Pencak Silat remain underexplored, with most research focusing on physical fitness and self-confidence (Nurjanah et al., 2022).

METHOD

Research Design

The research design used is a Corellation and Comparative Study, with data collection employing a quantitative method. The research design employed in this study is a combination of correlational and comparative methods, allowing for the examination of relationships between variables as well as the comparison of differences across groups. This approach provides valuable insights into how the variables are related and whether significant disparities exist between them. To collect the necessary data, a quantitative method is used, ensuring that the results are based on objective measurements that can be systematically analyzed. The use of this method guarantees accuracy and reliability, making it suitable for drawing meaningful conclusions from the data.

Research Participants

The purposive sampling technique was used because this study focuses on specific groups of Pencak Silat athletes—those who compete individually and those who compete in teams. This method allowed the researchers to select athletes who fit these categories, ensuring the sample aligned with the study's objectives. The sample consisted of 30 athletes, 16 males and 14 females, with 15 individual athletes (covering single art and fighting categories) and 15 team athletes (including doubles and team arts categories). The athletes from PAL Kota Bandung had an average age of 16 to 23 years and a weight range of 45 to 60 kg, while the PON West Java athletes had an average age of 21 to 35 years and a weight range of 45 to 95 kg.

Research Procedure

The research procedure began with obtaining permission from the relevant authorities, who are the subjects of the study, Pencak Silat PON Jawa Barat and Pencak Silat PAL Kota Bandung, and explaining the purpose of the research. Following this, the date for distributing the questionnaires was scheduled after coordinating and communicating with the relevant authorities from the respective sports branches. The distribution of the questionnaires is planned for May 2024. Subsequently, the questionnaires were disseminated online via the Google Form platform, with prior approval from the relevant authorities in the Pencak Silat PON Jawa Barat and PAL Kota Bandung athletes.

Data Measurement and Analysis

The CSAI-2R questionnaire was chosen to measure anxiety levels because it is a well-established tool specifically designed to assess competitive anxiety in athletes (Putra & Guntoro, 2022; Trpkovici et al., 2023). Its 17 items are broken into three important subscales: self-confidence, cognitive anxiety, and somatic anxiety, allowing for a detailed understanding of different aspects of anxiety. The use of a Likert scale (ranging from 1 to 5) provides clear, measurable responses, making it easier to quantify the athletes' experiences. Additionally, the high reliability of the subscales, especially in self-confidence (0.89) and somatic anxiety (0.84), ensured that the tool was both accurate and consistent for this study.

The General Self-Efficacy Scale (GSES) was selected to measure self-efficacy levels because it is a widely-used, reliable instrument that captures key dimensions of self-efficacy: initiative, effort, and persistence (Lazić et al., 2021; Putra et al., 2019). Its adapted 12-item Likert scale (from 1 = strongly disagree to 4 = strongly agree) allows for straightforward data collection while maintaining strong reliability (Cronbach alpha = 0.95). The use of these questionnaires ensures that both anxiety and self-efficacy are measured in a consistent and validated way, aligning with the goals of the study to accurately assess these psychological traits in athletes.

The collected data were analysed using IBM SPSS Statistics version 25 software. Descriptive statistical analysis was used to evaluate the data distribution and obtain a general overview of the anxiety levels and self-efficacy in each group. Inferential statistical analysis, such as correlation tests to measure the relationship between anxiety levels and self-efficacy, as well as independent sample t-tests, used to compare the differences between the two groups in terms of anxiety levels and self-efficacy.

RESULTS AND DISCUSSION

This study aims to analyse the differences in anxiety and self-efficacy levels between individual and team categories in the context of Pencak Silat athletes. To achieve this objective, a series of statistical tests were conducted, including descriptive statistics, correlation tests, and hypothesis testing. The results from these tests provide insights into the relationship between anxiety and self-efficacy in individual and team athletes, as well as the significant differences between the two. The following is a detailed explanation of the results and discussion of the conducted research.

Table 1. Descriptive Statistics

	N	Mean	Std. Deviation
Individual Anxiety	15	40.4207	5.88051
Individual Self-Efficacy		25.9015	4.94715
Team Anxiety	15	39.5633	3.88638
Team Self-Efficacy		27.5558	3.90243

Based on the table above, the results of the descriptive statistical test for the two variables (anxiety and self-efficacy) as well as the two categories (individual and team) show that in the individual category, the average total score for individual anxiety is 40.4207, while the average total score for individual self-efficacy is 25.9015. In the team category, the average total score for team anxiety is 39.5633, while the average total score for team self-efficacy is 27.5558. Individual anxiety's standard deviation is around 5.88051. This indicates that, on average, the individual anxiety values in this group tend to vary by 5.88 points from the average. The individual self-efficacy standard deviation is approximately 4.94715. This suggests that there is a difference between the average individual self-efficacy and the individual self-efficacy values in this group. The team anxiety standard deviation is approximately 3.88638. This suggests that the team's anxiety levels often vary from that point from the average team anxiety. The team self-efficacy standard deviation is approximately 3.90243. Accordingly, the team's self-efficacy ratings tend to vary by roughly that many points from the average team self-efficacy.

Table 2. Correlation Test Results for Anxiety and Individual Self-Efficacy

		Anxiety	Self-Efficacy
Anxiety	Pearson correlation	1	.771
	Sig. (2-tailed)		0.001
	N	15	15
Self-Efficacy	Pearson correlation	.771	1
	Sig. (2-tailed)	0.001	
	N	15	15

Based on the table above, the results of the correlation test show that the pearson correlation value between anxiety and self-efficacy is 0.771, indicating a strong positive relationship between anxiety and self-efficacy in the individual category. The significance value (Sig. (2-tailed)) is 0.001, indicating that this correlation is statistically significant at the 0.05 significance level. This means there is a strong and significant relationship.

Table 3. Correlation Test Results for Anxiety and Team Self-Efficacy

		Anxiety	Self Efficacy
Anxiety	Pearson correlation	1	-.532
	Sig. (2-tailed)		0.041
	N	15	15
Self Efficacy	Pearson correlation	-.532	1
	Sig. (2-tailed)	0.041	
	N	15	15

Based on the table above, the correlation test results show that the pearson correlation value of -0.532 indicates a moderate negative relationship between anxiety and self-efficacy in the team category. The p-value (Sig. (2-tailed)) is 0.041, which is less than 0.05. This means that an increase in anxiety tends to be followed by a decrease in self-efficacy.

Table 4. Hypothesis Test Results

	t	Sig	Result
Equal variances assumed	-0.454	.001	P < 0.05 H1 Accepted

To determine the difference in anxiety and self-efficacy levels between individual and team categories, the researchers used the Independent Sample t-Test technique. Based on the table above, the summary of the hypothesis test results in this study shows that the t-value is -0.454 and the significance value is 0.001. Since $P < 0.05$, the t-test results indicate significance at the 5% level. This indicates that we reject the null hypothesis (H0), which states that there is no difference between the two groups, and accept the alternative hypothesis (H1), which states that there is a difference.

To date, many studies have focused on understanding how anxiety can affect performance in sports, both in training and competition contexts. By reducing anxiety and improving mood, sports activities not only support mental well-being but can also be a source of stress that triggers anxiety (Ács et al., 2020; Diotauti et al., 2021). It is well-known that sports activities have the potential to induce high levels of stress and anxiety, and implementing various psychological strategies can be beneficial in managing this anxiety (Arvinen-barrow & Walker, 2017). Therefore, self-efficacy has become a subject of in-depth analysis in the field of sports, considered one of the most relevant psychological constructs for athletic performance (Chang et al., 2014). Self-efficacy influences an individual's ability to adapt and cope with difficult life situations, including the ability to handle failure and confidence in one's abilities, thereby lowering anxiety when performing an action (Popovych et al., 2020). Self-efficacy beliefs act as a guide that directs how certain situations are interpreted in the assessment of problem-solving focused on potential. In the context of sports, self-efficacy serves as a strong predictor of performance (Poluektova et al., 2023). Emotional intelligence, self-efficacy, and psychological well-being significantly impact athletes' attitudes and behaviours (Strykalenko et al., 2019; Cheban et al., 2020). They are determinant factors for psychological success in professional activities (Popovych et al., 2019). It can be concluded that self-efficacy plays an important role for athletes because their

confidence or attitude towards their ability to solve complex problems can reduce anxiety levels before competing and influence performance on the field.

In general, anxiety has two main components, namely the cognitive component which includes disturbing thoughts and worries, and the somatic component which includes the level of physical activation. In the discussion of anxiety, we can start with a theoretical concept that asserts that different types of motivation produce varying affective, cognitive, and behavioural responses in athletes, depending on their level of involvement in an activity (Bosque et al., 2022; Ryan & Decci, 2017). Some of the impacts include impaired concentration, dominance of negative thoughts, and decreased communication abilities (Osborne et al., 2014). This emotional condition can be described as competitive anxiety, which characterises tension, nervousness and fear arising from increased activity of the nervous system, especially in the context of sports competition (Martorell et al., 2020), which can have both positive and negative impacts on athlete performance (Zafra et al., 2017).

This research aims to determine the relationship between pre-competition anxiety levels and self-efficacy among individual and team categories of Pencak Silat athletes, as well as to compare the differences in anxiety levels and self-efficacy between these two categories. Based on the results of the study conducted on 30 athletes, using correlation tests between anxiety and individual self-efficacy in Table 2, a strong positive relationship was found. This indicates a strong and significant correlation, it means that an increase in one variable tends to be accompanied by an increase in the other variable. This means that the higher the level of anxiety experienced by a person, the higher their level of self-efficacy. This finding is interesting because it is often assumed that anxiety will lead to a decrease in self-efficacy. However, in this context, it is possible that individuals experiencing high anxiety might also feel more determined to enhance their self-efficacy as a mechanism to cope with the anxiety. The discussion can explore why this relationship might occur and its implications in the context of anxiety management and the development of self-efficacy at an individual level (Villega-Frei et al., 2024).

The correlation test between anxiety and team self-efficacy in Table 3 shows a moderate negative relationship, which is statistically significant. This means that as anxiety increases, self-efficacy tends to decrease, and this relationship is quite strong. Discussions can consider factors contributing to this relationship, such as the impact of anxiety on collaboration, communication, and trust between team members. For example, team management strategies that reduce anxiety could improve self-efficacy and overall team performance. In competitive situations, anxiety and stress can worsen factors predicting team performance, like team effectiveness and potential. In these conditions, team performance depends more on their ability to think and function cohesively or on the team's shared cognition (Niler et al., 2021). In this context, it will depend on the amount of effort within the team. It is also believed that by working together, more communication will be built, and then various information will also be obtained from each other (Paramitha et al., 2022). Additionally, the hypothesis test using the Independent Sample t-Test in Table 4 shows that the significance value supports the acceptance of H1 and the rejection of H0. This indicates a difference in self-efficacy concerning pre-competition anxiety levels among Pencak Silat athletes from the Pencak Silat PON Jawa Barat team and the Pencak Silat PAL Kota Bandung. Based on the results obtained, there is a difference in pre-competition anxiety levels and self-efficacy between individuals and teams. This is consistent with the research conducted by Legesse (2016) that athletes participating in individual sports experience higher pre-competition anxiety levels than athletes in team sports.

Based on the data results in Table 1, the anxiety level of individual athletes is higher than that of teams. While the higher level of self-efficacy is shown by team category athletes. It can be concluded based on the above data that individual category athletes experience higher anxiety than teams, but their self-efficacy is lower than teams. It means that individual category athletes depend solely on themselves and are only capable of controlling their own emotions and ideas when faced with anxiety when they have an objective to meet, particularly before competition. As a result, their confidence in accomplishing their goals declines. On the other hand, team athletes had higher levels of self-efficacy than individual athletes. This means that when individuals in the team feel anxious about pre-competition anxiety, they are still able and confident in shaping their beliefs about their ability to solve complex problems. With strong trust in their teammates, they are

usually motivated to put in maximum effort to achieve their desired goals. This is similar to what Bandura described: individuals with high self-efficacy levels tend to be motivated to strive hard to achieve desired goals, which often leads to success (Salanova et al., 2022). On the other hand, individuals with low self-efficacy are more likely to give up quickly and experience failure. This is consistent with research by Amar et al. (2023) indicating that athletes who feel capable and confident in their own efforts tend to be more optimistic and less anxious. Conversely, athletes who feel incapable and attribute failures to external factors tend to be more anxious and pessimistic about their competition outcomes.

This research is not without limitations. This research has several limitations. The sample used is less varied and only includes Pencak Silat athletes from West Java, so it may not represent the characteristics of athletes from other regions or countries. In addition, the sample size (30 athletes) is relatively small, so the results of this study may not be generalisable. This study only compared levels of anxiety and self-efficacy in individual and team categories of pencak silat athletes, so it did not explore other psychological variables or differences in different types of sport. For future research, it is recommended to use samples from various sports that have different characteristics and team dynamics. The use of questionnaires as a measurement tool has limitations in terms of respondent subjectivity. Although the questionnaires used (CSAI-2R and GSES) have been validated, there is still the possibility of bias in the answers given by the athletes. The positive relationship between individual anxiety and self-efficacy can be explained using several contemporary psychological frameworks. Social cognitive theory suggests that individuals with high self-efficacy are more likely to interpret anxiety-inducing situations as challenges rather than threats. This allows them to use anxiety as a motivational force, leading to enhanced performance (Hidayat & Ramli, 2019).

Furthermore, challenge and threat theory highlights that athletes who perceive stressful situations as a challenge tend to perform better, as this mindset increases their focus and motivation to succeed (Uphill et al., 2019). Studies have shown that athletes who maintain high self-efficacy are more resilient under pressure and view anxiety as a tool for growth (Laureano et al., 2014). Additionally, achievement goal theory suggests that athletes who focus on mastering a task are more likely to interpret anxiety as an opportunity for growth, which positively reinforces their self-efficacy (Honicke et al., 2020). Recent research highlights that athletes with higher self-efficacy tend to adopt coping mechanisms that transform anxiety into a motivational factor, leading to enhanced performance in individual sports (Meijen et al., 2020).

Practically, athletes can benefit from interventions such as cognitive-behavioral strategies like positive self-talk, mindfulness-based interventions that promote emotional regulation, and goal-setting techniques that focus on achievable tasks to gradually enhance self-efficacy (Sappington & Longshore, 2015). Coaches and sports psychologists should focus on strengthening athletes' perceptions of control over their anxiety, employing biofeedback techniques, and visualisation practices to reinforce their belief in their ability to succeed even under stress (Quartioli et al., 2022).

CONCLUSION

The results of the study showed significant differences in levels of anxiety and self-efficacy between individual and team categories of Pencak Silat athletes. Individual athletes tend to experience higher anxiety before competition, while team athletes show higher self-efficacy. These findings highlight the importance of different psychological approaches to overcome anxiety and increase self-efficacy among both groups of athletes to support their performance in competition. Overall, this study indicates that the current research findings are consistent with previously published findings and, in fact, strengthen the existing understanding of the relationship between anxiety, self-efficacy, and the differences between individual and team athletes. By understanding the limitations and considering suggestions for further research, it is hoped that future research can provide more in-depth and accurate insight into the psychological factors that influence athlete performance in various competition contexts.

This study has several limitations. The sample is limited to 30 Pencak Silat athletes from West Java, which may not represent athletes from other regions or countries, and the small size may affect generalisability. The research focuses only on anxiety and self-efficacy in individual and team categories, without exploring other psychological variables or sports types. Future research should include samples from different sports with

varied characteristics and team dynamics. Additionally, using questionnaires (CSAI-2R and GSES), though validated, carries potential for respondent bias due to subjectivity.

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CONFLICT OF INTEREST

The authors state no conflict of interest.

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