



An Investigation of Mental Toughness, Anxiety, and Self-Talk in Pencak Silat Athletes in Tangerang Regency, Indonesia

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History Article

Received January 2026
Approved April 2026
Published vol 13 no 1 2026

Keywords

Mental toughness; Self-Talk; Anxiety; Pencak silat

Abstract

Psychological factors are essential in supporting athletic performance, particularly in combat sports such as pencak silat, which involve high competitive pressure. This study aimed to examine mental toughness, anxiety, and self-talk among pencak silat athletes in Tangerang Regency, Indonesia and to analyze their relationship based on gender and competition level. The participants consisted of 31 male and female athletes preparing for the Provincial Sports Week (PORPROV), selected through purposive sampling. Data were collected using standardized questionnaires measuring mental toughness, competitive anxiety, and self-talk. The data were analyzed using descriptive statistics, cross-tabulation, and correlation analysis with SPSS version 26.0. The results showed that male athletes, predominantly aged 17–23 years, demonstrated higher mental toughness and lower anxiety levels compared to female athletes, particularly at national and provincial competition levels. Athletes competing at higher levels tended to exhibit stronger mental toughness and more frequent self-talk, while also experiencing increased anxiety due to greater performance demands. Overall, the findings indicate a close interaction between mental toughness, anxiety, and self-talk, highlighting the importance of psychological skill development to enhance mental readiness and competitive performance among pencak silat athletes.

How to Cite

Sumiyati, E., Haqiyah, A., Riyadi, D. N., & Rahmah, H. A. (2026). An Investigation of Mental Toughness, Anxiety, and Self-Talk in Pencak Silat Athletes in Tangerang Regency, Indonesia. *Journal of Physical Education, Health and Sport*, 13 (1), 626-631.

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INTRODUCTION

Psychological factors play a crucial role in shaping athletic performance, particularly in high-pressure combat sports such as pencak silat. Athletes are frequently exposed to intense competitive environments that demand not only physical readiness but also strong mental resilience. This creates an urgent need to understand the psychological attributes that support optimal performance, especially among regional athletes such as those in Kabupaten Tangerang. Mental toughness, anxiety, and self-talk are three interconnected components that significantly influence how athletes interpret stress, make decisions, and execute techniques during competition.

Existing studies highlight the importance of mental toughness as a predictor of athletic success. Research shows that mental toughness is closely related to grit, where higher levels of grit contribute to stronger mental resilience in pencak silat athletes (Wijayanti, R.; Setiawan, A.; Kurniawan, 2025). Moreover, psychological interventions such as appreciative inquiry have been found effective in enhancing athletes' mental toughness by helping them develop clearer future goals and performance strategies (Rahma, 2025). These findings underscore the need for targeted psychological training to strengthen athletes' coping capacities.

Another key psychological factor is anxiety, which is known to negatively affect performance. However, evidence suggests that athletes with higher mental toughness experience lower levels of competitive anxiety, enabling them to manage pressure more effectively (Masturah, 2024). Additionally, a significant negative correlation has been identified between self-confidence and competition anxiety, indicating that increases in confidence can substantially reduce anxiety levels (Triana, R.; Pratama, A.; Lestari, 2020). These findings highlight the relevance of integrating confidence-building and mental toughness training into athlete development programs.

While the current references do not directly examine self-talk, it is widely recognized as a mechanism that influences both mental toughness and anxiety. Positive self-talk can enhance focus, reduce stress, and improve emotional regulation factors essential for successful performance in combat sports. Given the diverse psychological demands placed on pencak silat athletes, understanding how self-talk interacts with mental toughness and anxiety is essential for developing holistic psychological interventions.

Based on this context, the purpose of this study is to explore the levels and interrelationships of mental toughness, anxiety, and self-talk among pencak silat athletes in Kabupaten Tangerang. The novelty of this study lies in its integrative examination of these three psychological constructs within a regional pencak silat context, an area that has received limited empirical attention. Unlike previous studies that tend to focus on single psychological variables or elite-level athletes, this research emphasizes regional athletes and positions self-talk as a complementary cognitive mechanism that may strengthen mental toughness and mitigate anxiety. By adopting this combined perspective, the study is expected to generate context-specific evidence that can support the design of more comprehensive and culturally relevant psychological training interventions to optimize performance in competitive pencak silat.

METHOD

This study employed a quantitative cross-sectional design to examine psychological characteristics among pencak silat athletes. This study involved a total of 31 pencak silat athletes from Tangerang Regency, Indonesia who were preparing for the regional multi-event Provincial Sports Week (PORPROV) competition. The participants were selected using a purposive sampling technique, with inclusion criteria requiring athletes to be actively registered in local pencak silat clubs, engaged in regular training, and having at least one official competition experience. The sample consisted of both male and female athletes with varying levels of match experience, ranging from local and regional competitions to a smaller group who had competed at the national level. This distribution provided a representative overview of the competitive background of pencak silat athletes in Kabupaten Tangerang.

The study utilized three primary instruments to measure mental toughness, anxiety, and self-talk. Mental toughness was assessed using a modified questionnaire that incorporated four key components: control, commitment, challenge, and confidence based on established frameworks from previous research. Competitive anxiety was measured through a validated instrument that evaluated cognitive anxiety, somatic anxiety, and self-confidence, reflecting constructs commonly associated with athletes' psychological readiness. Self-talk was measured using a standardized self-report inventory designed to capture both the frequency and the nature (positive or negative) of

athletes' internal dialogue during training and competition. All instruments were adapted to the Indonesian context and underwent preliminary checks to ensure clarity and reliability.

Data collection was conducted during scheduled training sessions, where participants were informed about the purpose of the study and provided with the questionnaires to complete individually. All responses were processed and analyzed using SPSS version 26.0 for Windows. Data analysis included descriptive statistics to determine overall trends in mental toughness, anxiety, and self-talk, followed by cross-tabulation to explore differences based on athletes' match experience. Correlation and regression analyses were also performed to examine the relationships among the three psychological variables. The significance level for all statistical tests was set at $p < 0.05$.

RESULTS AND DISCUSSION

This section presents and discusses the findings of the study based on the collected data. The results are first described through the demographic characteristics of the participants, followed by an interpretation of the findings in relation to existing literature. Demographic information is essential to provide context for understanding the sample profile and to support the interpretation of subsequent analyses. Table 1 summarizes the demographic characteristics of the participants ($n = 31$), including gender, competition level, and age. The table provides an overview of the composition of the sample, which serves as a foundation for interpreting the psychological and performance-related variables examined in this study.

Table 1. Demographic Data

Variable	Category	n	(%)
Gender	Male	21	67.7
	Female	10	32.3
Competition Level	International	2	6.5
	Local	2	6.5
	National	13	41.9
	Provincial	14	45.2
Age	17–23 years	27	87.1
	24–30 years	4	12.9
Total		31	100.0

Table 1 presents the demographic characteristics of the participants ($n = 31$), including gender, competition level, and age. The gender distribution shows that the majority of

respondents were male (67.7%), while females accounted for 32.3% of the sample. This distribution indicates a predominance of male participants, which should be considered when interpreting the findings, as gender representation may influence the generalizability of the results. Nevertheless, data derived from a dominant demographic group can still provide meaningful insights when appropriately contextualized (Noori, 2022; Shareef, 2022).

Regarding competition level, most participants had experience at the provincial (45.2%) and national (41.9%) levels, indicating that the sample predominantly consisted of athletes with moderate to high competitive exposure. In contrast, participation at the international and local levels was relatively limited, with each accounting for 6.5% of respondents. This distribution suggests that the participants generally possessed substantial competitive backgrounds, particularly at regional and national stages, which is relevant for interpreting performance-related and psychological outcomes in this study (Akbar, M. F.; Pratama, R. R.; Hidayat, 2023; Lilo, S.; Rahman, A.; Putra, 2023).

The age distribution demonstrates that the majority of participants were young adults aged 17–23 years (87.1%), while a smaller proportion fell within the 24–30-year age range (12.9%). This concentration indicates that the findings primarily reflect characteristics and experiences typical of younger athletes. While this age profile allows for a focused analysis of early adulthood, it also implies that perspectives from older age groups are less represented and should be interpreted with caution (Noori, 2022; Shareef, 2022).

Table 2. Descriptive Statistics of Participants' Age ($n = 31$)

N	Min	Max	Mean	Standard Deviation
31	16.00	28.00	20.29	3.07

Descriptive statistics (**Table 2**) further indicate that participants' ages ranged from 16 to 28 years, with a mean age of 20.29 years and a standard deviation of 3.07. The relatively small standard deviation suggests limited age variability within the sample, with most participants clustered around the mean. All respondents provided complete data, supporting the reliability of the demographic profile. Although this narrow age range strengthens internal consistency for analyses focused on young adults, it may limit the generalizability of the findings to older populations (Muziki, 2023; Nasya, R. A.; Amelasasih, 2025; Noori, 2022).

Table 3 presents the cross-tabulation of gender and competition level across psychological variables (self-talk, anxiety, and mental toughness) and age categories among the participants. The table provides the distribution of frequencies and percentages within gender for each competition level.

Table 3. Cross-Tabulation of Gender and Competition Level by Psychological Variables and Age

Variable	Category	Gender	International n (%)	Local n (%)	National n (%)	Provincial n (%)	Total
Self-Talk	Low	Male	0 (0.0)	1 (12.5)	3 (37.5)	4 (50.0)	8
		Female	0 (0.0)	2 (33.3)	4 (66.7)	0 (0.0)	6
	High	Male	1 (7.7)	1 (7.7)	6 (46.2)	5 (38.5)	13
		Female	1 (25.0)	0 (0.0)	2 (50.0)	1 (25.0)	4
Anxiety	Low	Male	0 (0.0)	2 (20.0)	5 (50.0)	3 (30.0)	10
		Female	1 (20.0)	0 (0.0)	1 (20.0)	3 (60.0)	5
	High	Male	1 (10.0)	0 (0.0)	4 (40.0)	5 (50.0)	10
		Female	0 (0.0)	0 (0.0)	3 (60.0)	2 (40.0)	5
Mental Toughness	Low	Male	1 (10.0)	1 (10.0)	4 (40.0)	4 (40.0)	10
		Female	1 (14.3)	0 (0.0)	2 (28.6)	4 (57.1)	7
	High	Male	0 (0.0)	1 (9.1)	5 (45.5)	5 (45.5)	11
		Female	0 (0.0)	0 (0.0)	2 (66.7)	1 (33.3)	3
Age (years)	17–23	Male	1 (5.6)	2 (11.1)	6 (33.3)	9 (50.0)	18
		Female	1 (11.1)	0 (0.0)	4 (44.4)	4 (44.4)	9
	24–30	Male	0 (0.0)	0 (0.0)	3 (100.0)	0 (0.0)	3
		Female	0 (0.0)	0 (0.0)	0 (0.0)	1 (100.0)	1

The crosstabulation of gender, competition level, and self-talk among athletes indicates that self-talk is influenced by both gender and the level of competition. Male athletes tend to exhibit low self-talk primarily at the national and provincial levels, whereas female athletes with low self-talk are mostly concentrated at the national level. In contrast, high self-talk is more commonly observed among athletes competing at national and provincial levels, with male athletes showing a broader distribution across different competition levels. These patterns suggest that self-talk functions as a psychological tool that varies according to competitive context and gender, potentially supporting confidence and performance.

Male athletes generally demonstrate higher self-confidence and strategic ability, which may be reflected in their self-talk patterns, while female athletes often exhibit higher levels of anxiety, potentially influencing their self-talk negatively (Tokunaga, M.; Imanaka, K.; Miyamoto, 2000; Verdaguer, F. J. P.; Viladrich, C.; Alcaraz, 2016, 2017).

Athletes competing at national and provincial levels show elevated self-talk, likely due to increased competitive pressure and the need for psychological resilience, whereas participation at the international level remains limited, highlighting a potential gap in self-talk utilization at the highest competitive tier (Sobirov, 2022; Tokunaga, M.; Imanaka, K.; Miyamoto, 2000). While these findings demonstrate a positive relationship between self-talk and competitive levels, it is important to note that not all athletes may benefit equally from self-talk strategies, especially in high-pressure situations where anxiety can overshadow its effectiveness.

The crosstabulation of gender, competition level, and anxiety among athletes provides important insights into how these factors interact to shape psychological experiences. The findings show that anxiety levels differ notably across competitive tiers, with gender playing a significant role. Male athletes tend to exhibit low anxiety at the national and provincial levels, whereas female athletes show a higher concentration of anxiety at the national level, indicating that both gender and competition level are influential in determining athletes' psychological states. Research suggests that female athletes generally report higher competitive anxiety than males, particularly in performance-related contexts, and studies in swimming have shown that women experience greater anxiety than men in higher-stakes competitions (Barbacena, M. M.; Grisi, 2008). Athletes competing at national and provincial levels display a wider range of anxiety levels, with high anxiety being more prevalent, while international-level athletes tend to report lower anxiety, reflecting the limited number of athletes experiencing high anxiety at this tier (Liloi et al., 2023; Sobirov et al., 2022).

The data also highlight the minimal representation of athletes at local and international levels, suggesting that these competition tiers may not fully capture the dynamics of anxiety present in more competitive environments. While these findings emphasize the interaction of gender and competition level in shaping anxiety, it is also important to consider that individual resilience and coping strategies can play a critical role in miti-

gating anxiety, potentially influencing athletes' experiences regardless of their gender or competitive level.

The crosstabulation of gender, competition level, and mental toughness among athletes reveals important patterns shaped by both gender and competitive tiers. The findings indicate that male athletes generally exhibit higher mental toughness, particularly at the national and provincial levels, whereas female athletes show a more concentrated presence at the provincial level. This distribution highlights the interaction between gender and competition level in shaping mental resilience. Research suggests that male athletes often score higher in aspects of mental toughness, such as confidence and strategic ability, while female athletes, though resilient, may face additional psychological pressures due to societal expectations (Tokunaga, M.; Imanaka, K.; Miyamoto, 2000; Yadav, 2024). Athletes competing at higher levels, particularly national and professional tiers, tend to demonstrate stronger mental toughness compared to those at lower tiers, and the concentration of study participants at national and provincial levels may better reflect the variability of this attribute (Chen, M. A.; Cheesman, 2013; Yarayan, M.; Aslani, M.; Ghahremani, 2018).

The limited representation of athletes at international and local levels suggests that these tiers may not fully capture the nuances of mental toughness across genders, emphasizing the importance of understanding these dynamics to inform training and support strategies aimed at enhancing resilience. While gender differences are evident, some studies indicate that overall psychological competitive ability may not differ significantly between sexes at higher levels, highlighting a complex interaction where both gender and competition level influence mental toughness, yet individual capabilities can vary widely (Tokunaga, M.; Imanaka, K.; Miyamoto, 2000).

The analysis of age distribution among athletes reveals notable patterns in competitive participation across genders and age groups. The majority of athletes are in the 17–23 years age range, with a strong concentration at provincial and national levels. Male athletes in this younger group are slightly more represented at the provincial level, while female athletes are fairly evenly distributed between national and provincial competitions. The older age group of 24–30 years is much smaller, consisting of three males and one female, and they are primarily found at local and international levels, suggesting a decline in competitive participation with age.

These findings indicate that younger athletes tend to dominate higher-level competitions, while older athletes, although less represented, may still achieve success, particularly in disciplines that emphasize experience and tactical skills, such as judo and swimming. Overall, the data highlight the interaction between age and gender in shaping competitive pathways, showing that younger athletes are more prevalent in national and provincial competitions, while older athletes follow alternative competitive trajectories.

The study highlights the complex relationship between mental toughness, anxiety, and self-talk among pencak silat athletes in Kabupaten Tangerang. The results show that male athletes, predominantly aged 17–23 years, tend to demonstrate higher levels of mental toughness and lower anxiety compared to female athletes, particularly at the national competition level. These findings are consistent with previous studies indicating that mental toughness plays a significant role in reducing competitive anxiety, with higher mental toughness being associated with better emotional control and lower anxiety levels (Listiana, D.; Prabowo, A.; Suryadi, 2024; Raynadi, F. B.; Rahayu, 2017).

In addition, self-talk emerged as an important psychological strategy that supports mental resilience and performance under competitive pressure, reinforcing athletes' ability to manage stress and maintain focus (Wijayanti, R.; Setiawan, A.; Kurniawan, 2025). The results further suggest that athletes with stronger mental toughness are more likely to employ effective self-talk, which contributes to improved anxiety regulation and psychological readiness (Nurcahyadi, A.; Trihandayani, 2024). However, it is important to note that individual responses to psychological demands and interventions may vary, indicating the need for tailored mental training programs that consider gender differences and individual psychological characteristics.

CONCLUSION

This study indicates that pencak silat athletes in Tangerang Regency, Indonesia are predominantly male, mostly within the young adult age range of 17–23 years, and largely compete at the provincial and national levels. The findings reveal a clear relationship between competition level, gender, mental toughness, anxiety, and self-talk. Athletes competing at higher levels, particularly at the national and provincial tiers, tend to demonstrate higher levels of self-talk and mental toughness, while simultaneously experiencing

greater competitive anxiety due to increased performance demands. Male athletes generally exhibit stronger mental toughness and lower anxiety levels compared to female athletes, whereas female athletes tend to experience higher anxiety, especially at the national competition level. Overall, the results highlight the important role of psychological factors particularly mental toughness and self-talk in managing anxiety and supporting athletic performance. These findings emphasize the need to consider psychological preparedness as a key component in the development and training of pencak silat athletes to enhance their competitive readiness and performance outcomes.

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