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Mental Toughness: A Gender-Based Descriptive Study of Pencak Silat Athletes on the West Java XV PORPROV Team of Subang Regency

¹Wahyu Saputra*, ²Asep Akbaruddin

Abstrac: Abstract of the article should be provided general idea about research to readers, abstract should Mental toughness is an important psychological aspect that supports athletic performance, particularly in pencak silat, which requires simultaneous physical, technical, tactical, and mental readiness. This study aimed to describe the level of mental toughness among pencak silat athletes on the West Java XV PORPROV team of Subang Regency. The study employed a descriptive quantitative approach using a survey method. The participants were 15 athletes, consisting of 8 male and 7 female athletes, selected through total sampling. The instrument used was a 23-item mental toughness questionnaire covering four components: thrive through challenge, sport awareness, tough attitude, and desire success. Data were analyzed using descriptive statistics, including minimum score, maximum score, mean, standard deviation, frequency, and percentage. The results showed that the athletes' overall mental toughness score had a mean of 67.00 with a standard deviation of 8.86, a minimum score of 56, and a maximum score of 81. Based on the mean \pm 1 SD categorization, 2 athletes (13.3%) were in the low category, 9 athletes (60.0%) were in the moderate category, and 4 athletes (26.7%) were in the high category. Overall, the mental toughness of the pencak silat athletes on the West Java XV PORPROV team of Subang Regency was in the moderate category. These findings indicate that mental training needs to be integrated more systematically into the training program to support athletes' competitive readiness.

Keyword: Mental Toughness; Pencak Silat; PORPROV Athletes; Sport Psychology; Athlete Development

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INTRODUCTION

Pencak silat is a martial art sport characterized by a competitive, dynamic, and complex nature because it requires athletes to be fully prepared not only in technical and physical aspects but also in tactical and psychological aspects. In the context of competitive sport, athletes' success cannot be separated from the quality of a well-planned and integrated coaching process, as competitive performance is the result of the interaction of multiple interrelated components. In pencak silat, these demands become even more apparent because athletes must be able to demonstrate effective movement skills, read match situations, maintain concentration, and adjust their responses quickly under competitive pressure (Dimiyati et al., 2020; Mujika et al., 2018; Patah et al., 2021).

As a martial art involving direct confrontation with an opponent, pencak silat places athletes in highly demanding competitive situations. Athletes must cope with rapid score changes, physical contact, the need to make decisions in a short time, and expectations to maintain consistent performance throughout the match. Such conditions make pencak silat not only an arena for testing physical and technical skills but also a context for testing athletes' psychological readiness. In martial arts and individual sports, high competitive pressure can increase anxiety, reduce decision-making quality, and ultimately affect performance when athletes lack adequate mental preparedness (Beheshti et al., 2021; Kuan & Roy, 2007; Raynadi et al., 2016).

Among the psychological aspects relevant to competitive sport, mental toughness is one of the most widely discussed constructs because it is closely related to athletes' ability to endure, adapt, and remain effective when facing pressure. Mental toughness essentially refers to a set of psychological qualities that enable athletes to remain focused, confident, resilient, and consistent when dealing with challenges, obstacles, and demanding competitive situations (Crust, 2012; Gucciardi et al., 2008). Athletes with strong mental toughness tend to be better able to manage competitive stress, respond adaptively to pressure, sustain motivation, and remain task-oriented even in unfavorable conditions (Gerber et al., 2012; Sheard et al., 2009). More broadly, mental toughness has also been reported to be associated with successful sport performance, making it an important construct to understand within athlete development contexts (Cowden, 2017).

In martial arts, the importance of mental toughness becomes even more prominent because athletes are required not only to be physically strong but also to control their emotions, maintain courage, manage fear, and stay calm when facing direct pressure from opponents. In pencak silat, athletes who fail to manage pressure tend to experience increased competitive anxiety, loss of focus, and reduced performance quality. In contrast, athletes with stronger mental qualities are generally better prepared to maintain stable performance throughout the competition (Beheshti et al., 2021; Nurnadhira Nazri & Salamuddin, 2019; Raynadi et al., 2016). Therefore, mental toughness can be viewed as an important psychological resource that supports the competitive readiness of pencak silat athletes.

Several previous studies have shown that psychological factors play an important role in competitive sport, including martial arts. Dimiyati et al. (2020), for example, found that Indonesian elite pencak silat athletes require strong psychological skills to support competitive performance. Other studies have also demonstrated a relationship between mental toughness and competitive anxiety among pencak silat athletes, indicating that stronger mental qualities may be associated with a better ability to cope with competitive pressure (Raynadi et al., 2016). In the context of student-athlete and martial arts development, the need to strengthen psychological aspects has also been increasingly emphasized, as coaches and athletes are beginning to recognize that psychological training is not merely complementary but an integral part of the achievement process (Candra et al., 2023; Maulidya & Jannah, 2021; Nissa & Soenyoto, 2021).

Nevertheless, studies on mental toughness among pencak silat athletes in Indonesia still leave room for further development, particularly in the context of descriptive profiling for groups of athletes being prepared for regional multi-sport events. Many studies have focused more on the relationship between mental toughness and anxiety, psychological capital, or general psychological skills, whereas studies specifically examining the mental toughness profile of

pencak silat athletes within regional teams preparing for multi-event competitions such as PORPROV remain relatively limited (Dimiyati et al., 2020; Maulidya & Jannah, 2021; Raynadi et al., 2016). In fact, this kind of descriptive data is important as an initial basis for understanding athletes' psychological readiness, identifying mental training needs, and designing more targeted intervention programs.

The context of the West Java XV PORPROV team of Subang Regency is important to examine because the athletes in this team are situated within a performance-oriented training environment. In such circumstances, training demands, internal competition, coaches' expectations, and the burden of representing the region may become sources of psychological pressure that affect athletes' competitive readiness. Therefore, mapping the mental toughness of PORPROV team athletes is important not only from an academic perspective as a contribution to the sport psychology literature on pencak silat, but also from a practical perspective as a basis for evaluating mental training in the training environment. Information on athletes' mental toughness can help coaches understand the team's psychological readiness more objectively and provide a foundation for designing support strategies that fit athletes' needs (Birrer & Morgan, 2010; Candra et al., 2023).

Based on the foregoing, this study was designed to describe the level of mental toughness among pencak silat athletes on the West Java XV PORPROV team of Subang Regency. The study focused on 15 athletes consisting of 8 male and 7 female athletes. Specifically, this study aimed to provide an overview of athletes' mental toughness both overall and by sex as an initial evaluation in the coaching process. The findings are expected to offer practical contributions for coaches and sport administrators in designing more systematic mental training programs, while also expanding empirical studies on mental toughness among regional-level pencak silat athletes.

METHOD

This study employed a descriptive quantitative approach using a survey method. This approach was used to describe athletes' mental toughness without providing any treatment to the research participants (Fraenkel et al., 2012). The participants were all pencak silat athletes on the West Java XV PORPROV team of Subang Regency, totaling 15 athletes, consisting of 8 male and 7 female athletes. The sampling technique used was total sampling, so all members of the population were included as research participants.

The research instrument was a mental toughness questionnaire adapted from Yates (2020) and developed from the conceptual framework of Gucciardi et al. (2008). The instrument consisted of 23 statements covering four main components: thrive through challenge, sport awareness, tough attitude, and desire success. In the previous manuscript version, all items were declared valid with a cut-off value of 0.306, and the instrument reliability coefficient was 0.912.

Data were collected by administering the questionnaire to all participants. The data were then analyzed using descriptive statistics, including minimum score, maximum score, mean, standard deviation, frequency, and percentage. To facilitate interpretation, mental toughness scores were grouped into three categories—low, moderate, and high—based on the mean and standard deviation of the total score. Categorization was determined as follows: low if $X < M - 1SD$, moderate if $M - 1SD \leq X \leq M + 1SD$, and high if $X > M + 1SD$. Because this study was descriptive in nature, the results by sex were interpreted as descriptive patterns rather than inferential differences.

RESULT

This study involved 15 pencak silat athletes on the West Java XV PORPROV team of Subang Regency, consisting of 8 male and 7 female athletes. Based on the mental toughness score data obtained, descriptive analysis was conducted to describe the minimum, maximum, mean, standard deviation, and category distribution of athletes' mental toughness both overall and by sex.

1. Description of Athletes' Mental Toughness Scores

The descriptive analysis showed that the athletes' overall mental toughness score had a mean of 67.00 with a standard deviation of 8.856, a minimum score of 56, and a maximum score of 81. Descriptively, male athletes had a higher mean score than female athletes. Male athletes obtained a mean of 74.12 with a standard deviation of 5.46, whereas female athletes obtained a mean of 58.86 with a standard deviation of 1.77. These findings indicate descriptive variation in mental toughness scores between male and female athletes.

Table 1. Descriptive Statistics of Mental Toughness Scores of Pencak Silat Athletes on the West Java XV PORPROV Team of Subang Regency

Variable	Sex	n	Minimum	Maximum	Mean	SD
Mental Toughness	Male	8	67	81	74.12	5.46
	Female	7	56	61	58.86	1.77
Total		15	56	81	67.00	8.86

2. Categorization of Mental Toughness Level

In line with the method used in this study, categorization was based on the mean \pm 1 SD of the total score. Based on the overall mean of 67.00 and a standard deviation of 8.856, the category thresholds were as follows: low if $X < 58.14$, moderate if $58.14 \leq X \leq 75.86$, and high if $X > 75.86$. The categorization results showed that, of the 15 athletes, 2 athletes (13.3%) were in the low category, 9 athletes (60.0%) were in the moderate category, and 4 athletes (26.7%) were in the high category. Thus, the mental toughness of the pencak silat athletes on the West Java XV PORPROV team of Subang Regency was generally in the moderate category.

When viewed by sex, the male athletes consisted of 0 athletes in the low category, 4 athletes in the moderate category, and 4 athletes in the high category. Meanwhile, the female athletes consisted of 2 athletes in the low category, 5 athletes in the moderate category, and 0 athletes in the high category. Descriptively, this pattern indicates that the high category appeared only among male athletes, whereas the low category appeared only among female athletes. Because this study was descriptive in nature, these findings are understood as patterns in the data distribution rather than inferential differences.

Table 2. Categorization of Athletes' Mental Toughness Level

Category	Score Interval	Male	Female	Total	Percentage
Low	$X < 58.14$	0	2	2	13.3%
Moderate	$58.14 \leq X \leq 75.86$	4	5	9	60.0%
High	$X > 75.86$	4	0	4	26.7%
Total		8	7	15	100%

3. Visual Representation of the Findings

To clarify the data patterns, the results are visualized in two figures. The first figure presents the mean mental toughness scores of male athletes, female athletes, and the overall sample. The second figure presents the distribution of low, moderate, and high categories by sex. These visualizations facilitate a clearer understanding of score patterns and the dominance of categories within the team.

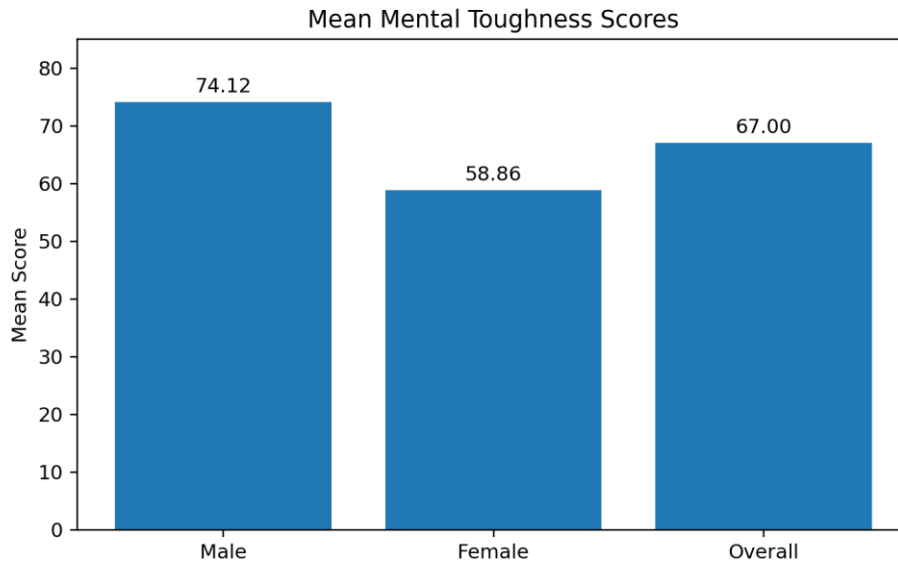


Figure 1. Mean Mental Toughness Scores by Sex and Overall

Figure 1 shows that the mean mental toughness score of male athletes (74.12) was higher than that of female athletes (58.86), whereas the overall mean score was 67.00. This visualization reinforces the descriptive variation in mental toughness scores across the sex-based groups.

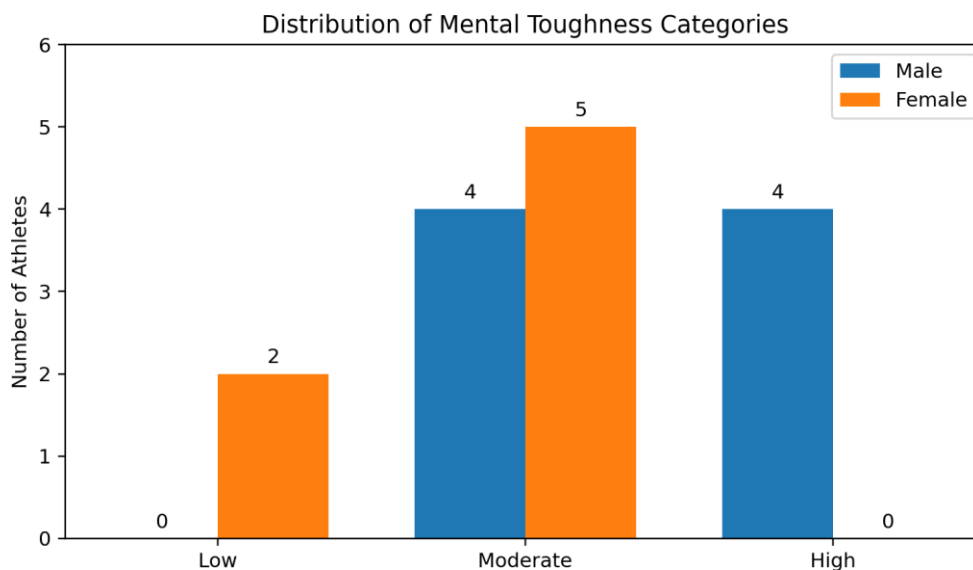


Figure 2. Distribution of Mental Toughness Categories by Sex

Figure 2 shows that the moderate category was the most dominant category, both overall and within each group distribution. Among male athletes, the distribution was evenly split between the moderate and high categories, whereas among female athletes, the majority were in the moderate category and a smaller portion were in the low category.

DISCUSSION

The results showed that the mental toughness of pencak silat athletes on the West Java XV PORPROV team of Subang Regency was generally in the moderate category, with an overall mean score of 67.00 and a category distribution dominated by the moderate category (60.0%), followed by the high category (26.7%) and the low category (13.3%). These findings indicate that the athletes generally possessed a sufficient foundation of mental toughness, although not all of them

had yet reached an optimal level. In the sport psychology literature, mental toughness is understood as a set of psychological characteristics that helps athletes withstand pressure, adapt to difficult situations, and continue functioning effectively in competitive settings (Gucciardi et al., 2008; Sheard et al., 2009). Therefore, the dominance of the moderate category in this study may be interpreted to mean that most athletes already had an adequate psychological foundation to cope with the demands of training and competition, but they still needed further strengthening to make their performance more stable and consistent.

The finding that most athletes were in the moderate category is also consistent with the view that mental toughness is not a fixed attribute; rather, it is a psychological quality that develops through training experience, exposure to challenges, and repeated adaptation processes. Crust and Clough (2011) emphasized that mental toughness in young athletes develops through a challenging yet supportive training environment, athlete involvement in decision-making, and learning from failure and competitive pressure. In this context, the moderate category found among the PORPROV team athletes may be understood as an indicator that the athletes already had a basic psychological foundation, but the mental training process still needs to be directed more systematically so that this quality can progress toward the high category. This interpretation is also relevant to Cowden's (2017) review, which showed that athletes with higher mental toughness tend to perform better at higher competitive levels. Therefore, the fact that most athletes had not yet reached the high category can be read as an area for continued development within the team's coaching process.

The presence of 2 athletes in the low category is also an important finding in this study. Although the number is small, this finding indicates that within one team there were still athletes who were likely more vulnerable to pressure, less stable in facing competitive situations, or had not yet developed sufficiently strong psychological resources to maintain performance consistently. Gerber et al. showed that individuals with higher mental toughness tend to be more resilient to perceived stress; thus, mental toughness can be understood as a protective resource in dealing with pressure. In the sport context, this condition is important because training demands, achievement targets, and competitive expectations may affect athletes' performance quality when they are not balanced by adequate mental readiness. Accordingly, athletes in the low category in this study should be viewed as a group requiring greater attention in psychological coaching rather than merely as ordinary score variation.

The results of this study can also be strengthened by findings from the same sport. Raynadi et al.'s study of pencak silat athletes in Banjarbaru showed a relationship between mental toughness and competitive anxiety. This finding is important because it demonstrates that in pencak silat, mental toughness is not only relevant as a general sport psychology concept, but is also directly related to athletes' readiness to cope with competitive pressure. Therefore, the dominance of the moderate category in this study may be interpreted as showing that most athletes already had sufficient psychological capital to face competitive demands, but some still required further strengthening so that their responses to competitive pressure could become more adaptive. In other words, the findings of this study extend previous work by providing a descriptive profile of mental toughness among PORPROV-level pencak silat athletes, rather than merely examining its relationship with other variables.

When examined by sex, this study showed that male athletes had a higher mean mental toughness score (74.12) than female athletes (58.86). In addition, the high category appeared only among male athletes, whereas the low category appeared only among female athletes. Although this pattern appears fairly clear descriptively, the results must still be interpreted cautiously. Given the descriptive research design and the small number of participants, this study was not intended to conclude that there are gender differences in an inferential sense. A more appropriate position is that this study found variation in the profile of mental toughness by sex within the group under study. This caution is important because previous studies in martial arts suggest that age and sex are often positioned as variables worthy of mapping, but their empirical results are not always consistent. Accordingly, the findings of this study are more appropriately read as team profiling data rather than as a basis for broad generalizations about male and female athletes.

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From a coaching perspective, the results of this study confirm that pencak silat training programs should not focus only on technical, tactical, and physical aspects. Mental training also needs to be designed more systematically, especially because research on mental toughness has shown positive relationships with the use of psychological strategies such as self-talk, emotional control, and relaxation. Crust and Azadi (2010) showed that these psychological strategies were positively correlated with mental toughness in athletes, whereas Crust and Clough (2011) emphasized the importance of gradual exposure to challenging situations, reflection on failure, and a supportive training environment in the development of mental toughness. Based on this, the findings of the present study can be used as a basis for coaches to design more operational mental coaching programs, for example through match simulations, emotional control exercises, goal setting, self-talk, imagery, and periodic psychological evaluations. Thus, mental toughness data do not merely remain descriptive information, but can be transformed into a foundation for practical intervention.

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The findings of this study are also aligned with the broader need for psychological coaching in Indonesian pencak silat. Dimiyati et al.'s study of Indonesian pencak silat athletes at the Asian Games showed that psychological skills are an important component of high-level pencak silat performance. Although that study did not specifically examine mental toughness, its direction supports the argument that psychological factors are indeed essential components in competitive pencak silat. Therefore, the results of this study reinforce the argument that profiling mental toughness at the PORPROV level remains valuable because it provides an initial picture of the psychological readiness of athletes who are in the coaching pathway toward regional competition. In other words, this study contributes at a practical level by providing baseline data that can be used for evaluating team coaching.

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Nevertheless, the findings of this study need to be read alongside their limitations. First, the number of participants was only 15 athletes from a single team, so the findings are contextual and cannot be generalized broadly. Second, the data were obtained through a self-report instrument, so the resulting scores depend heavily on the participants' perceptions and honesty. Third, the study was descriptive in nature, so it cannot explain the factors underlying particular levels of mental toughness or test differences between groups inferentially. Therefore, future studies are recommended to involve larger samples, analyze each dimension of mental toughness in more detail, and include other variables such as competitive anxiety, competition experience, or coach support so that the interpretations produced can become more in-depth.

CONCLUSION

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Based on the findings of this study, it can be concluded that the mental toughness of pencak silat athletes on the West Java XV PORPROV team of Subang Regency was generally in the moderate category. This was indicated by an overall mean score of 67.00 and a category distribution dominated by the moderate category, namely 9 athletes (60.0%), followed by the high category with 4 athletes (26.7%) and the low category with 2 athletes (13.3%). These findings indicate that most athletes already possessed a sufficient foundation of mental toughness, although not all had yet reached an optimal level.

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Descriptively, male athletes had a higher mean mental toughness score than female athletes. In addition, the high category appeared only among male athletes, whereas the low category appeared only among female athletes. However, because this study used a descriptive approach with a limited number of participants, these findings are not intended as inferential conclusions, but rather as an initial description of the mental toughness condition of the athletes in the team under study.

The results of this study emphasize that mental toughness is a psychological aspect that needs attention in the coaching process of pencak silat athletes. Therefore, coaches and sport administrators need to integrate mental training more systematically into training programs so that athletes' readiness develops not only in physical, technical, and tactical aspects, but also in the psychological aspects that support competitive performance.

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