

# Athletes' Mental Toughness: Gender, Type of Sport, and Competition Experience

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**Abstract.** An athlete's success or failure is influenced by many factors. However, behind every challenge, mental toughness is the main key. This study aims to determine the profile or description of mental toughness of athletes in terms of gender, type of sport, and athlete competition experience. This study uses a quantitative approach with a correlational method. The research sample consisted of 100 athletes from seven sports. The research was conducted using an accidental sampling technique. Data collection was carried out using a modified scale from the Sports Mental Toughness Questionnaire (SMTQ). The results showed that there were significant differences in mental toughness based on gender, sport, and athlete competition experience (all:  $P < 0.05$ ). Male athletes tend to have higher mental toughness than female athletes. In the sports of football, volleyball, badminton, and table tennis have higher mental toughness than the sports of Sepak Takraw, basketball, chess. Whereas in athletes with higher level of competition experience, they also tend to have higher mental toughness. This finding can be concluded that male athletes with high competition experience from the sports of soccer, volleyball, badminton, and table tennis tend to have higher mental toughness than female athletes who have not had competitive experience from the sports of basketball, Sepak Takraw, and chess. Therefore, it is important to consider such factors in training and mental development programs to improve their overall performance.

**Keywords:** Mental Toughness, Athletes, Sports

## Introduction

The success or failure of an athlete is influenced by many factors. Especially on physical and mental skills that must always be excellent to achieve good performance. However, surveys prove that it is the mental factor that affects the performance or skills of athletes (Guszkowska & Wójcik, 2021; Irianto & Lumintuarso, 2020; Van Cutsem & Marcora, 2021). The more athletes have a tough mentality, the higher their peak performance will be, and vice versa (Dirgantari, 2018). If athletes experience mental fatigue, it will impact their skills, including technical and decision-making skills (Sun et al., 2021; Yuan et al., 2023). In addition, athletes with low mental toughness also often have high anxiety (Zubić, 2021), which will also impact their performance (Bisri et al., 2022). Moreover, another study showed that the high mental toughness of kickboxing athletes determines the outcome of victory or defeat in competition (Slimani et al., 2016). This means that mental toughness is key in every competition to maximize what they do during training.

Every athlete undoubtedly has different levels of mental toughness, as reflected in their responses and adjustments to the challenges and pressures they face in competition. Interesting differences often manifest across specific genders. While there are no absolute generalizations, some findings suggest that in certain cases, male athletes tend to exhibit higher levels of mental toughness compared to female athletes (Singh, 2022; Khan et al., 2017). Female athletes often encounter more adverse life events such as interpersonal conflicts and discrimination than males, thereby exacerbating self-esteem issues in female athletes (Walton et al., 2021). Furthermore, high endogenous testosterone concentrations in male athletes can provide physiological and psychological advantages such as reducing fear, enhancing attention in facing threats, increasing aggression, and dominance motivation (Poccox et al., 2023). These biological differences between males and females result in performance disparities among athletes ranging from 10% to 30% (Hunter et al., 2023). Therefore, male athletes tend to possess greater mental toughness than female athletes in certain contexts.

The attainment of optimal results in a competition, influenced by mental factors, also depends on the type of sport they engage in (Pelin et al., 2020). This is because each sport inherently possesses unique habits, dynamics, and demands that influence how athletes prepare and compete. Conversely, the abundance of experience or flight hours can also shape an athlete's mental fortitude in facing a competition. This factor suggests that athletes who have participated at higher competitive levels tend to have stronger mental toughness (Cowden, 2017; Pettersen et al., 2022). The more experience and the higher level of competition they face, ultimately, they gain extensive knowledge about various ways to confront pressures and challenges that arise, making them more prepared and adept at handling various conditions. Thus, the influence of sport type and level of experience on mental toughness cannot be overlooked.

This study aims to ascertain the profile or depiction of athletes' mental toughness concerning gender, sport type, and competitive experience. The proposed hypotheses suggest a relationship between gender and mental toughness, a relationship between sports discipline and mental toughness, and a relationship between competitive experience and mental toughness. Thus, this research provides a more holistic view of the factors influencing athletes' mental toughness, which can be utilized for the development of more effective training strategies.

## Method

This study employs a quantitative approach with a correlational method. The participants in this research are 100 student-athletes from UKM UNIOR Maulana Malik Ibrahim State Islamic University of Malang. The sample comprises seven different sports disciplines, namely football, volleyball, badminton, table tennis, sepak takraw, and basketball, selected through an accidental sampling technique. Data collection utilizes a questionnaire employing a Likert scale consisting of four response categories: very often, often, rarely, and very rarely. Data collection is conducted using a modified scale from the Sports Mental Toughness Questionnaire (SMTQ), which has three factors labeled Confidence, Constancy, and Control. (Sheard et al., 2009). The original items consist of 14 items and the researcher modifies it by adding one item to the control aspect. Data processing in this study used correlational techniques, namely Spearman's correlational test to examine any relationship between gender and mental toughness, type of sport with mental toughness, and experience competing with mental toughness.

## Results

### Hypothesis Test

Based on the results of data processing, it is known that gender, type of sport, and competition experience have a significant relationship with athletes' mental toughness because all P values <0.05 (table 1). The correlation between gender (female) and mental toughness has a negative direction of -0.167. This means that the mental toughness of female athletes tends to be lower than men. The correlation between sports (sepak takraw, basketball, and chess) and mental toughness has a negative direction of -0.178. This means that the mental toughness of female athletes in sepak takraw, volleyball, and chess tends to be lower. While the correlation between the experience of competing (experienced) with the mental toughness of athletes has a positive direction of 0.288. This means that male athletes who have higher competition experience tend to have higher mental toughness than female athletes who do not have competition experience.

**Table 1.** Spearman's Correlation Test

	<b>P (sig)</b>	<b>R</b>
<b>Gender</b> (1) Male; 2) Female)	0,048	-0,167
<b>Type of Sport</b> (1) Football; 2) Volleyball; 3) Badminton; 4) Table Tennis; 5) Sepak Takraw; 6) Basketball; 7) Chess)	0,038	-0,178
<b>Competition Experience</b> (1) None; 2) Local; 3) Regional; 4) Nasional; 5) International)	0,002	0,288

**Mental Toughness Sub-Scale Categorization.** The results of table 2 show that the constancy level of athletes is high. This means that they have good commitment and responsibility in completing the matches they face. They tend to have strong determination and do not give up easily in defending every match point. The confidence level of the athletes is also included in the high category. This illustrates that they have high confidence in their abilities, knowledge, or quality. They tend to be able to face challenges with strong confidence. While the level of control possessed by athletes is included in the medium category. This illustrates that they have fairly good emotional control. They tend to be focused and not easily distracted.

**Table 2.** Categorization of Mental Toughness Subscales

<b>Sub scale</b>	<b>Score</b>	<b>Score min</b>	<b>Score max</b>	<b>Category</b>
<b>Constancy</b>	1345	1600	400	High

<b>Confidence</b>	1732	2400	600	High
<b>Control</b>	1247	2000	500	Medium

*Sport-type mental toughness sub-scale.* The results of sport type show that the control aspect of the athletes is lower than the constancy and confidence aspects (table 3). In football with 16 (16%) participants and an average score of 44.8, constancy and confidence are classified as high, while the control aspect they have is classified in the medium category. In volleyball with 18 (18%) participants and an average score of 43.4, and badminton with 19 (19%) participants and an average score of 44.3 both have very high constancy, high confidence aspects, and moderate control aspects. In table tennis with 11 (11%) participants and an average score of 43.5, sepak takraw with 9 (9%) participants and an average score of 41, and basketball with 13 (13%) participants and an average score of 41.9 both have high constancy, moderate confidence aspects, and moderate control aspects. Meanwhile, in chess with 14 (14%) participants and an average score of 42.4, constancy is classified as high, the confidence aspect is classified as high, and the control aspect is classified as moderate.

**Table 3.** Categorization of Sport-Type Mental Toughness Subscales

Type of Sport	F	(%)	Mental toughness sub-scale			Mean
			Constancy	Confidence	Control	
Football	16	16%	High	High	Medium	44,8
Volleyball	18	18%	Very High	High	Medium	43,4
Badminton	19	19%	Very High	High	Medium	44,3
Tennis Table	11	11%	High	Medium	Medium	43,5
Sepak Takraw	9	9%	High	Medium	Medium	41
Basketball	13	13%	High	Medium	Medium	41,9
Chess	14	14%	High	High	Medium	42,4

*Level Competition Experience.* The results show that 29 (29%) athletes who do not have competitive experience have an average score of 41.5, have aspects of constancy that are classified as high, and have aspects of confidence and control classified as moderate. Athletes who have experience competing at the local level with 22 (22%) participants and an average score of 42.6, as well as the regional level with 24 (24%) participants and an average score of 43.8 are classified as high in aspects of constancy and confidence, while the control aspect is classified as moderate. Athletes who have experience competing at the national level with 22 (22%) participants and an average score of 45.1, and the international level with 3 (3%) participants and an average score of 47 are classified as very high in the constancy aspect, the confidence aspect is high, and the control aspect is moderate. Thus, the confidence aspect in athletes who do not have competitive experience is lower than the confidence aspect in athletes who already have competitive experience (table 4).

**Table 4.** Categorization of Level Competition Mental Toughness Subscales

Competing Experience	F	(%)	Mental toughness sub-scale			Mean
			Constancy	Confidence	Control	
None	29	29%	High	Medium	Medium	41,5
Local	22	22%	High	High	Medium	42,6
Regional	24	24%	High	High	Medium	43,8
National	22	22%	Very High	High	Medium	45,1
International	3	3%	Very High	High	Medium	47

## Discussion

The correlation of the Spearman test on gender with mental toughness had an R square value of -0.167, which means that the correlation is classified as very weak which is useful to explain the prediction of the results although limited. The results showed that differences in gender only explained 16.7% of the difference in male

athletes being in higher levels of mental toughness. This is in line with the results of the study that the mental toughness of male Taekwondo athletes is better than female athletes with a difference of only 0.13 (Julita, 2024). Although there is a significant relationship, it is important to remember that a weak correlation does not necessarily indicate the absence of a relationship between the observed variables. Similarly, the correlation between sport type and mental toughness which is classified as very weak ( $R = -0.178$ ) suggests that in certain sports there are still many other factors that can affect both variables. For example, the factor of self-awareness of the environment and culture, where the lack of awareness of athletes in certain organizations and sports that have their own processes, systems, values, and beliefs (Eubank et al., 2017).

Meanwhile, the athlete's competition experience factor is also quite correlated with mental toughness because the R square value is 0.288 (table 1). The higher the experience of competing, the higher the mental toughness. Reinforced by table 4 which confirms other research findings that athletes who have competed at the national and international levels have a higher level of mental toughness (Meggs et al., 2014). This indicates that the experience of competing adequately describes mental toughness and is useful for improving mental toughness in athletes.

Overall, the results show that athletes have a lower control aspect than other aspects investigated in this study, which is classified in the moderate category, so that emotional control and negative energy control are still quite good (table 2). In the mental context, of course this is due to the natural anxiety that all athletes cause in competition. However, athletes with high mental toughness tend to have quick decision-making that allows for a quick shift to clutch stages, where athletes can excel when under pressure (Jackman et al., 2020). In addition, the higher level of mental toughness, the greater courage the athlete has. (Toros et al., 2023). With strong mental toughness, athletes have protection in the face of stressful competition situations.

## Conclusion

Each gender, type of sport, and competition experience has a significant relationship with mental toughness (all P values:  $< 0,05$ ). Male athletes tend to have higher mental toughness than female athletes. In the sports of football, volleyball, badminton, and table tennis have higher mental toughness than the sports of sepak takraw, basketball, chess. Whereas in athletes with higher level of competition experience, they also tend to have higher mental toughness. This finding can be concluded that male athletes with high competition experience from the sports of soccer, volleyball, badminton, and table tennis tend to have higher mental toughness than female athletes who have not had competitive experience from the sports of basketball, sepak takraw, and chess. Therefore, it is important to consider such factors in training and mental development programs to improve their overall performance. Further research is needed to expand or deepen the findings of athletes' mental toughness in this study.

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