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Mental Toughness and Academic Achievement of Student-Athletes in Junior High Schools

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Abstract

This study aims to determine the relationship between mental toughness and academic achievement among junior high school student-athletes. This study uses a quantitative approach, using a survey to assess mental toughness and academic achievement. The participants of the study were 109 student-athletes from state junior high schools 18 and 2 Bengkulu City. The findings of the study indicate that student-athletes have mental toughness in the moderate category, and the academic achievement of student-athletes is in a good category. From the results of statistical analysis using SPSS version 22, it is known that there is no relationship between mental toughness and academic achievement among junior high school student-athletes (sig.636 > 0.05). However, the findings show that student-athletes with more mental toughness tend to show higher levels of academic achievement. This study highlights the importance of developing mental toughness not only for sports but also for academic success. This study offers insights for educators, coaches, and policymakers to strive to improve athletic performance and educational outcomes in junior high schools.

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INTRODUCTION

Mental toughness is a person's ability to remain strong, persist, and overcome challenges, pressures, or difficulties in life, both in everyday situations and stressful conditions (Bull et al., 2005; Gucciardi et al., 2015). Mental toughness involves emotional resilience, the ability to stay focused, and the ability to stay positive and find solutions despite adversity (Gucciardi, 2017; Miçooğulları, 2017). Mental toughness is also often associated with the ability to bounce back after failure or setbacks and not give up easily (Jones et al., 2002). Mental toughness is essential for junior high school student-athletes to face pressure, challenges, and difficulties in training and competition (Hunt et al., 2020; Pocius & Malinauskas, 2024). Mental toughness builds self-confidence, helps them develop a positive attitude towards failure, and controls emotions when facing difficult situations.

Mental toughness allows student-athletes stay focused, manage stress, and overcome anxiety so they can perform optimally (Akbar et al., 2024; Coulter et al., 2010). Mental toughness also maintains motivation, discipline, and a never-give-up attitude in training or competition. Mental toughness allows student-athletes to bounce back from failure, injury, or fatigue, making them more persistent and responsible for their actions. Mental toughness not only supports sports performance but also forms a strong character, making them more mature and ready to face various life challenges.

Academic achievement refers to the accomplishments or results a person obtains in the field of education, especially in terms of learning and examinations (Zimmerman, 1990). Academic achievement includes grades achieved in subjects, mastery of material, and the ability to achieve set educational goals. Academic achievement is often measured through test scores, grade point averages, awards, or other achievements that demonstrate ability and progress in studies (Stipek & Weisz, 1981). In addition, academic achievement can also include the development of different skills, such as research, creativity, and problem-solving abilities applied in an academic context. Academic achievement is vital for junior high student-athletes because it helps them develop knowledge, skills, and character that are useful in and outside of sports (Parker et al., 2016). Academic achievement also opens up opportunities for further education (Flashman, 2012), supports alternative careers outside of sport, and increases self-confidence and self-satisfaction. Balancing academics and sports teaches discipline and responsibility while preparing them for a more stable and prosperous future (Sæther et al., 2022).

The topic of mental toughness and academic achievement for junior high school athletes is important because it emphasizes the need for a holistic approach to education and sports (Bulent et al., 2017; Georgakis et al., 2014; Sæther et al., 2022). This approach ensures that young athletes' mental toughness and academic development are balanced so that they grow into healthy, resilient individuals who excel in all aspects of their lives. While there is research on mental

toughness and academic achievement, more needs to be known regarding the specific factors that contribute to the success of junior high school student-athletes. This study's rationale was to examine the relationship between mental toughness and academic achievement in junior high school student-athletes. Its purpose was to determine whether mental toughness is positively correlated with academic achievement in junior high school student-athletes.

METHODS

The quantitative research method with correlation design is an approach that aims to measure the relationship or connection between two or more variables using numerical data and statistical analysis. In this method, researchers do not manipulate the variables but only observe the relationships that occur naturally between the variables.

Participant

There were 109 student-athletes in state junior high schools, 18 and 2 Bengkulu City, who participated in this study. There were 63 male student-athletes and 46 female student-athletes. Participant demographic data can be seen in Table 1 below.

Table 1. Sample demographic data

Sports	Frequency	Percentage
Futsal	31	28.44 %
Volleyball	27	24.77 %
Football	8	7.34 %
Karate	15	13.76 %
Swimming	2	1.83 %
Badminton	2	1.83 %
Basketball	18	16.51 %
Pencak silat	6	5.50 %

Instrument

This study has an independent variable, namely mental toughness. Mental toughness data is measured using the Indonesian Version of the MTQ instrument. This instrument consists of 10 items (Putra et al., 2024). This study also has a dependent variable, namely academic achievement. Data on the academic achievement of student-athletes was collected through report card scores from the last semester.

Data Analysis

The data were analyzed quantitatively by calculating the mean value and standard deviation. SPSS version 22 was used to calculate the correlation between mental toughness and academic achievement.

Table 2. Formula of Categories

Interval	Frequency
> (Mi + 1.8 SD) – (Mi + 3 SD)	Very High
> (Mi + 0.6 SD) – (Mi + 1.8 SD)	High
> (Mi - 0.6SD) - (Mi + 0.6 SD)	Moderate
> (Mi - 1.8 SD) – (Mi - 0.6SD)	Low
(Mi - 3SD) - (Mi - 1.8 SD)	Very Low

$$\text{Mi} = \frac{ST+SR}{2}$$

$$\text{SD} = \frac{ST-SR}{6}$$

Mi = Mean Ideal, ST = Maximum Score, SR = Minimum Score, SD = Standard Deviation.

RESULT

This study successfully revealed essential findings related to the mental toughness and academic achievement of student-athletes. Table 3 shows the level of mental toughness of student-athletes through the analysis of the ideal mean and standard deviation.

Table 3. The results of the mental toughness of student-athletes

Interval	Category	Frequency
58-70	Very High	0
46-58	High	6
32-46	Moderate	103
22-32	Low	0
10-22	Very Low	0

The explanation of the mental toughness data of student-athletes in Table 3 shows the distribution of mental toughness centred on the moderate category. No student-athletes are included in the very high category. Only 6 athletes are in the high category, which means that around 5.5% of the total student-athletes have a mental toughness that is considered high. Most student-athletes, namely 103 athletes (94.5%), are in the moderate category. The result shows that the majority of student-athletes have mental toughness at a moderate level. This means that they are able to face pressure and challenges, but there is still room for further development in order to achieve higher mental toughness. No student-athletes are included in either of the low categories, indicating that no athletes have very low or poor mental toughness. Overall, these data illustrate that the majority of student-athletes have mental toughness at a moderate level, which means they can manage pressure and stress quite well. However, there is still potential to improve their mental toughness to a higher level through training or psychological support.

Table 4. Academic Achievement

Category	Frequency	Percentage
Good	83	76.15 %
Moderate	26	23.85 %

The description of the academic achievement data of student-athletes shows that most student-athletes have good academic achievement. Of the total respondents, 83 student-athletes (76.15%) achieved the good category in their academic achievement, while 26 student-athletes (23.85%) were in the sufficient category. This indicates that the majority of student-athletes managed to maintain adequate academic achievement despite the demands of sports training and competition. However, there is still a small number of student-athletes who need to improve the quality of their academic achievement to reach a higher standard.

Table 5. One-Sample Kolmogorov Smirnov Test

	Unstandardized Residual
N	109
Asymp.Sig. (2-tailed)	.198

With a value of 0.198, the p-value is more significant than the general significance level ($\alpha = 0.05$), indicating that we fail to reject the null hypothesis (H0) in this context. H0 in this test states that the residual data follows a normal distribution.

Table 6. Anova Result

Combined	Sum of square	df	Mean square	F	Sig
	23.386	11	2.126	.399	.953
Linearity	1.137	1	1.137	.213	.645
Deviation from Linearity	22.249	10	2.225	.417	.935

Based on these data, the overall effect of the model (combined, linear, and deviation from linearity) is not statistically significant. Both linearity and deviation from linearity show high p-values (0.645 and 0.935), meaning the data do not significantly support a linear relationship, and deviation from linearity does not explain much of the variation. Therefore, the model does not provide strong evidence of a meaningful relationship in the data.

Table 7. Pearson correlation

		X	**Y**
X	Pearson correlation	1	.046
	Sig. (2-tailed)		.636
	N	109	109
Y	Pearson correlation	.046	1
	Sig. (2-tailed)	.636	
	N	109	109

The Pearson correlation between X and Y is very weak (0.046) and not

statistically significant (p-value = 0.636). This indicates that there is no substantial linear relationship between the two variables in the data set.

DISCUSSION

The results of this study revealed that the mental toughness of student-athletes was in the moderate category. The mental toughness of student-athletes often falls in the moderate range due to the need to balance the dual demands of sport and academics (O'Neil et al., 2021). This balancing act requires resilience in managing time, energy, and pressure (Vavassori et al., 2023). However, dividing their focus between these areas can result in a less robust level of toughness compared to full-time athletes or students who focus solely on academics. Additionally, as young people in their teens or early adulthood, they are still developing emotionally and learning to cope with success and failure (Parker et al., 2021). This ongoing process means their mental toughness is growing but still at a moderate level. The supportive environments they often have, while beneficial, can also make them less accustomed to handling challenges independently. Furthermore, limited experience in high-stakes competition and a focus on physical training rather than structured mental training means their mental toughness is developing but has yet to be at a high level.

This study revealed that there was no correlation between mental toughness and academic achievement of junior high school student-athletes. Similar research also revealed that student athletes have low mental toughness (Akbar et al., 2023). Student-athletes have busy schedules that require effective time management to complete academic tasks (Rothschild-Checroune et al., 2012). Although they have mental toughness in competition, they may struggle with academic pressures that require prolonged concentration. Intense physical activity can drain energy, making it difficult to focus on learning. In addition, high expectations from various parties to excel in both areas can increase their stress.

Student-athletes require a different approach to learning when transitioning from sports to academics (Brenda L. Vogel et al., 2019; Brown et al., 2015). In sports, mental toughness involves focus and quick decisions, whereas in academics, they require deep critical thinking and analytical skills. Sports emphasize motor memory, whereas academics require long-term understanding and detailed recall. In an academic environment, the ability to filter information, prioritize ideas, and integrate knowledge is essential. Time management in academics also requires flexible self-management since there is no coach to direct. Additionally, communication skills in classroom discussions differ from direct instruction on the field, requiring the ability to listen and express opinions.

External support and adequate academic facilities are essential for student-athletes to support their sporting and academic success (Ishaq & Bass, 2019; Weight et al., 2020). Many schools provide good sporting facilities, but academic support, such as tutoring and access to tutors, often needs to be improved (Huml et al., 2014). Student-athletes need support in study strategies and time management, especially given

their busy schedules (Hodes et al., 2015). Institutional flexibility in rescheduling exams or assignments is also vital so that they can catch up on academics while competing (Niehues et al., 2022). Psychological support also helps them manage stress and maintain emotional balance (Fogaca, 2021). Integrated programs, with academic mentors and dedicated study time, can ensure that student-athletes develop in both areas.

This study was limited to a sample of student-athletes from public schools that provide sports classes in Bengkulu City so that the results can affect the generalization of the findings. This study may have been conducted in a limited period, so it cannot observe long-term changes in student-athletes' academic and sports achievements. This study has yet to objectively measure the level of support received by student-athletes, both in terms of academic and sports facilities.

CONCLUSION

This study concluded that there was no significant relationship between mental toughness and academic achievement in junior high school student-athletes. However, the results of the analysis showed a tendency for student-athletes with higher mental toughness to have better levels of academic achievement. Thus, this study highlights the importance of developing mental toughness not only for achievement in sports but also to support academic success. This study provides insights for educators, coaches, and policymakers to strengthen programs that improve athletic performance as well as educational achievement in junior high schools.

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