

## The relationship between mental toughness, anxiety with the achievement motivation adolescent badminton athlete

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### ABSTRACT

**Problems:** Mental and emotional problems in badminton are the main focus in the effort to improve athlete performance. In this study there are several problems that occur in teenage athletes PB Flash, especially related to the level mental toughness, anxiety and achievement motivation athlete badminton. **Purpose:** This study identifies levels of mental toughness, anxiety and achievement motivation in teenage badminton in PB Flash in Serang regency. **Methods:** This research uses correlation quantitative descriptive methods with purposive sampling techniques. The sample consisted of 11 athletes aged 15-20 years. The tool used in this research is a questionnaire through a google form. The questionnaire shared are SMTQ (Sport Mental Toughness), SCAT (Sport Competition Anxiety Test) and SMS-28 (Sport Motive Scale). Descriptive analysis and double linear regression test, which are used to analyze data. **Results:** Based on the results obtained, the data is be concluded it is possible to perform a correlation test with a significance value of 0.020 with such a result there is a low significant relationship between the three variables. Level of mental toughness with a medium category of 7 athletes (63.7%), 4 with a high category (36.6%), a level anxiety low of 2 athletes (18.1%), a medium level 7 athlete (63.7%) and a high level of anxiety for 2 (18.1%), while the achievement motivation with an average category of 8 at the medium category (72.7%) and 3 at the high level (27.3%). **Conclusion:** The level of mental toughness, anxiety and achievement motivation athlete teenagers PB. Flash Serang has not strong enough relationship. As mental toughness increases, achievement motivation increases, and whereas anxiety increases then achievement motivation decreases experienced by athletes The results of this study also suggested that coaches and PB Flash Serang players should be able to add a mental training program for athletes.

**Keywords:** mental toughness, anxiety, achievement motivation, badminton, athlete.

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### Introduction

The development badminton in Indonesia is progressing very rapidly, this sport is popular with all ages, and is played by all genders (Pambudi, Titis, 2023). Badminton is popular in many countries especially in Asia, and badminton is even the second most popular sport in the world after soccer (Mansur et al., 2020). The development of badminton can be seen from many local and national clubs (Achmad Rifai et al., 2020). Badminton has made great progress, supported by the many achievements that have been made in this sport in both national and international championships (Limbong, 2021). Especially in the Banten area, especially in Serang regency development of badminton sports showed a positive trend. The increase in the development of this badminton can be seen many clubs that have been under going construction regularly. PB Flash is one of the badminton clubs in the district of Serang that is continuously committed to developing future prospective badminton athletes.

The goal of badminton games is to drop the shuttlecock into the oppenent's playing area so that they can't return it to get points (Hakim, 2022). Badminton requires good physical aspects, including speed, strength, endurance, power, coordination, balance, reaction and agility (Dameria et al., 2023). Beside the physical aspect, every badminton athlete must have a strong mental aspects (Irawan & Anam, 2022). One of the mental obligations of a badminton athlete is motivation, interest, mental stamina and self-confidence

(Atifah et al., 2022). These components are internal factors that determine performance because each component is interrelated and indissoluble (Edmizal et al., 2019).

Athletes use 80% of their minds competing, while 20% are used to determine tactics and strategies (Sani et al., 2020). Psychological approaches are expected to produce athletes who, in every performance, pay attention to motivation as well as mental (Sin, 2016). The advances and developments in sport psychology provide benefits especially for sport performances (Adiska Rani Ditya Candra et al., 2022). Sport psychology studies aspects of personal psychology and social psychology (situational) athletes such as, personality, mental, anxiety, and motivation (Ilham, 2021).

One of the mental components that can determine athlete performance is mental toughness (Ayyub Mas'ud et al., 2022). Mental toughness is a set of emotions, the behavior of an athlete in overcoming challenges, difficulties and stresses that are facing (Ikhrum et al., 2020). Mental toughness is the ability to produce and improve performance both subjectively and objectively in facing difficulties, while overcoming the tension, anxiety and despair associated with a competitive environment (Nugraha et al., 2020). There are several factors that affect the level of mental toughness athletes such as age and experience (Nissa & Soenyoto, 2021). Mental toughness can be seen through experience processes and environments, so a good performance will make athletes successful in competition (Faizah, 2021). Mental toughness is part of the most important aspect of athlete psychology (V. Pagdato et al., 2021).

Teenage athletes face physical and psychological demands (Galih Prastyo Utomo, 2022). Teenage athletes have many psychological problems, such as anxiety, stress and fear (Wiyata et al., 2022). Anxiety is a mixture of fear and anxiety about the future without specific reason for the fear (Negoro & Sungkowo, 2023). Anxiety is a negative emotion with the emergence of anxiety, excessive fear, the condition can change the psycholo-physiological aspects of stress (Salleh et al., 2021). PB. Flash's athletes have recently experienced match anxiety that affects their performance. This is reflected in a decrease in consistency in their performance, tense facial expressions, as well as the inability to execute techniques that they normally master well. On the physiological side, athletes who experience anxiety are characterized by the presence of increased blood pressure and near-heart increases, rapid breathing and pale faces (Ni'mah & Kusuma, 2022). Anxiety is caused by the following intrinsic factor, fear of fear and failure and lack of competitive experience. While anxiety with extrinsic factors: interracial, opponents, spectators and playground (Ria Oktafia et al., 2022). Athletes are under pressure from both coaches, opponents, and supporters (Lukman et al., 2024). Anxiety in adolescents occurs when athletes compete in individual sports versus team sports (Fadilah & Priambodo, 2024).

Each individual has a different level of motivation, some coming from themselves, through others and the desire to do something (Ridwan et al., 2020). Motivation is a combination of characters so it's vital for human resources especially for athletes (Irawan & Anam, 2022). Motivation is a form of support or incentive for athletes to reach their goals (V. Pagdato et al., 2021). Motivation is a form of support or incentive for athletes to reach their goals (Oktafiranda, 2021). Athletes must have a level of motivation to perform (Wafiiroh et al., 2022). Performance motivation is a form of effort or effort to the best outcome to be guided by a certain standard of excellence (Eko et al., 2019). Achievement motivation is a form of concern for competition and a desire to win a competition (Verren & Wijono, 2021). Performance motivation is inseparable in the sporting world (Kristanti & Jannah, 2022).

The research is to find out the relationship between mental toughness, anxiety and motivation for athlete performance. It is based on the description of the problem that has been mentioned. Because of the importance of psychological factors for athlete performance achievement, researchers were interested in investigating to what extent trainers understood the psychological factor in sport. Supported by research (Pratama et al., 2017) the role of psychology in sport to help athletes in developing talent. Supported by previous research that the role of psychology will determine performance and shape personality of athletes (Adiska Rani Ditya Candra et al., 2020). This study uses ideas about the psychological performance factors of mental exercises that are rarely discussed. The results of this study discuss how to develop more effective strategies and interventions to improve athlete performance. This research will not only provide in-depth insights into sports psychology, but can also provide practical benefits for coaches, managers, and the athletes themselves in an effort to improve their performance in the field.

## Method

The sample in this study was a badminton athlete at the club PB Flash of 11 athletes (8 boys and 3 girls) aged 15 to 20 years old. Were taken using purposive sampling techniques. With sampling criteria, the badminton athlete who still active in the tournament and still active athlete in the last 2 years.

This research was correlation quantitative descriptive method. Using a survey approach and distributing questionnaire. The instrument used in this study is a questionnaire, which is collected through a

google form. The shared is a questionnaire mental toughness (Sheard et al., 2009) containing 14 statements that already have good content validity and includes a set of item in the athlete’s mind, questionnaire used SCAT (Sport Competition Anxiety Test) by (Rainer Martens, Robin S. Vealey, 1997) its consists of 15 statements, and achievement motivation using the SMS-28 (Sport Motivative Scale) developed by (Pelletier et al., 2016) with 28 statements. With the calculation of the likert scale on the instrument or questionnaire SMTQ and SMS-28 have 4 answers options (very disagreeable, disagreed, agreed and very agreed), positive statements get score of 4 and negative statements score of 1. While SCAT has 3 answers choices (rarely, sometimes and often).

The data analysis techniques used in this study are the assumption test of normality (Shapiro-wilk), descriptive analysis and correlation of double linear regression, test between mental toughness, anxiety and achievement motivation and the data analysis program using SPSS version 25 for windows.

Table 1. Validity Statistic

Cronbach’s Alpa	Cronbach’s Alpa Based on Standardized Items	N of Items	Category
SCAT	0.97	15	Valid
SMS-28	0.70	28	Valid

Table 2. Reliability Statistic

Variable	Alpa	N of Items	Category
SCAT	0.85	15	Reliable
SMS-28	0.70 – 0.85	28	Reliable

**Result**

The results this study have been obtained and presented in tables with data calculations presented mean values, standard of deviation, maximum and minimum.

Table 3. Descriptive Data Format

No	Variable	Mean	Standard of Deviation	Max	Min
1	Mental Toughness	37.45	4.655	44	28
2	Anxiety	20.45	3.142	26	16
3	Achievement Motivation	85.64	6.607	96	76

Table 3 present sample data of 11, with mental toughness result obtained averages of 37.45, standard of deviation 4.655, maximum values 44, and minimum 28. On the anxiety variable obtaining averages are 20.45, standard of deviation 20.45, maximum values 36 and minimum 16. While the descriptive data values on achievement motivation obtained on average of 85.62, standard of deviation 6.607, maximum 96 and 76 for minimum.

Table 4. Categories Mental Toughness, Anxiety and Achievement Motivation on Sample

No	Variable	Category	Frequency	Persented
1	Mental Toughness	Low	0	0%
		Medium	7	63.7%
		High	4	36.3%
		<b>Total</b>	11	100%
2	Anxiety	Low	2	18.1%
		Medium	7	63.7%
		High	2	18.1%
		<b>Total</b>	11	100%
3	Achievement Motivation	Low	0	0%
		Medium	8	73.2%
		High	3	27.3%
		<b>Total</b>	11	100%

Based on the output of table 4. there is a categorization of the subjects of mental instruments toughness, anxiety and performance motivation divided into three categories: low, medium and high. Subjects mental toughness with categories medium totaled 7 with percentase 63.7% and high category totaled 4 people with percentase 36.6%. The SCAT test athleth have a low anxieties level are 2 with a percentase of 18.1%, athletes with a medium anxiety level are 7 with a percentase of 63.7% and athletes with a high anxiety level are 2, with a persesntase of 18.1% On the performance motivation of an athlete who has a medium categories motivation is 8 with a percentase of 72.7% and on the sport that has a high-performance motivation, are 3 with a percentase of 27.3%.

**Normality Test**

Tabel 5. *Test Of Normality*  
Shapiro-Wilk

Variable	Statistic	df	Sig.
Mental Toughness	.964	11	.816
Anxiety	.947	11	.605
Achievement Motivation	.936	11	.474

Table 5 gives the output of the normality test that has been performed using Shapiro-Wilk at the significance value of the variable X1 (mental toughness) = 0.816, X2 (anxiety) = 0,605 and variable Y (achievement motivation) obtained a data significance of 0.474. The significance resulting from each calculated variable is greater than 0.05 (sig > 0.05). Conclude mental toughness and anxiety with motivation performing meeting the normality test. Then the three variables as a whole are said to meet the criteria in the parametric statistical assumption test and the data are normally distributed.

**Linearity Test**

Tabel 6. *Linearity Test*

	df	f	Sig.
Achievement Motivation * Mental Toughness	1	1.106	.420
Achievement Motivation * Anxiety	1	8.626	.713

On the output table 5 shows the significance value of the DF value (Deviation from Linearity) shows a number greater than 0.05 (> 0.05), so it can be concluded that there is a significant relationship between mental toughness and performance motivation and there is the relationship between the linear significance of anxiety and the motivation of performance.

**Correlation Test**

Tabel 7. *Correlation Test*

		Mental Toughness (X1)	Kecemasan (X2)	Motivasi Berprestasi (Y)
Mental Toughness (X1)	Pearson Correlation	1	-.474	.194
	Sig. (2-tailed)		.141	.567
	N	11	11	11
Anxiety (X2)	Pearson Correlation	-.474	1	-.141
	Sig. (2-tailed)	.141		.680
	N	11	11	11
Achievement Motivation (Y)	Pearson Correlation	.194	-.141	1
	Sig. (2-tailed)	.567	.680	
	N	11	11	11

Based on the results of table 7 with the data output, it can be concluded that performance motivation correlated with mental toughness of 0.194, whereas performance motivations did not correlate with anxiety with a value of -0.141. So it can be concluded that if mental toughness and achievement

increases then anxiety decreases. On the contrary, when anxiety increases then mental toughness and achievement will decrease.

Tabel 8. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate.
1	.202 <sup>a</sup>	..041	-.199	.7.235

Based on the results of table 8. i.e. the summary model output explains the relationship between the bound variable and the free variable together, the r value is 0.202 with a low correlation coefficient when viewed from the interpretation guidelines.

Tabel 9. Correlation Coefficient Interpretation Guidelines

No	Coefficient	Relationship Level
1	0,00 - 0,199	Very low
2	0,220 - 0,399	Low
3	0,40 - 0,599	Medium
4	0,60 - 0,799	Strong
5	0,80 - 1,000	Very Strong

(Sugiyono, 2019)

Mental toughness and achievement motivation increases then anxiety decreases. On the contrary, when anxiety increases then mental toughness and achievement motivation will decrease.

**Discussion**

Based on the results of this study, there is a relationship between the three variables of mental toughness, anxiety and achievement motivation in PB. Flash athletes Serang Regency is as 0.202. This means that these three variables have a low relationship, so it can be concluded that when mental toughness and achievement motivation increase then the anxieties will decrease, whereas when the Anxiety increases then the mental toughness and achievement motivations will decline. In this study, no athletes had a mental level of toughness in athlete in the low category, whereas at anxiety level with a medium category there were seven, and athlete with a achievement motivation level in the high category were three. The results explained that the relationship between mental toughness, and anxiety toward motivation performed in PB Flash athletes.

Based on the results of the research, additions to the training program as well as intensive training in the mental and psychological programs are required. This is in accordance with the research carried out by (Pristiansyah et al., 2022), stated in the construction of sports the psychological aspect is one of the factors that influence success and achieved performance (Guntoro et al., 2020). In addition, athlete with good psychological maturity can maximize physical performance, techniques, tactics and strategies wven performing matches. So it can be concluded that psychological is an inseparable unity in the creation of performing athletes (Nawir et al., 2020).

Mental toughness and achievement motivation are the most important things in sport. Strengthened by a study conducted by (Darmawan & Susanto, 2021) that there is a between mental tenacity and competitive anxiety. Furthermore, a study (Kalinin et al., 2021) found that mental tenace can reduce the level of anxieties. In line with research (Dongoran et al., 2020) shows that motivation is crucial to achieving achievement. Athletes who are motivated to perform have the ability to act properly, to set and goals, and have various plans to success and avoid failure (Ong, 2019). Athletes who have performance motivation are more likely to succeed that athletes with low motivation (Triananda et al., 2021). In a study (Yuliastrid, 2021) athletes can their goals when, the athlete can control anxiety and stress.

The mental and psychological skills of the athlete should be improved as a result of the coach's knowledge of the mental training program (Negara et al., 2021). Therefore, coaches must be able to apply mental skills to enhance mental and motivational athletes to perform (Pujianto et al., 2022). The research carried out (Aep rohendi et al., 2021) provides and explanation that a coach should consider psychological factors, such as levels of anxiety and motivation because these factors affect how well an athlete plays on the field. could be expected to provide an overview of the psychology of athletes to face championship

events both nationally and internationally. Hopefully this research will provide about the psychology of athletes to face national and international championships, as well as can help coaches in developing mental training program.

### Conclusion

The results of the above research can be concluded that there is an influence with a low category, but has a positive relationship between mental toughness, and anxiety toward performance motivation in teen athletes club PB. Flash. This research can be recommended for coaches. Coaches need to develop an understanding and ability in sports psychology because athlete's psychology is important in achieving performance, there are still many ways to dig into the study of mental athletes such as the development of a mental training program that is systematically organized at the PB. Flash club so that his sportsmen are able to compete with other sportsmen both in the Serang regency, national and even in the international arena.

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