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**INVESTIGATION OF DISORDER FACTORS IN RELATION TO
MENTAL TOUGHNESS OF SOUTH SUMATERA
KARATE ATHLETES**

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Abstract 

The aim of this research is to investigate and find out whether there is a relationship between mental toughness and disturbance factors in South Sumatran karate athletes. The method used is the correlation method. The population is the projected 21 Aceh-North Sumatra PON athletes. The sample was taken from the total population, namely 21 athletes. Data collection uses psychological tests, namely mental toughness psychological tests before being connected to variables, and mental toughness psychological tests after being connected to internal and external variables. The number of valid questions was 18 questions with a reliability level above 0.607 with a strong relationship. Data analysis is parametric analysis of partial and simultaneous correlation tests. The research results showed that several factors were found that interfered with athletes' mental toughness due to internal and external factors. The relationship between internal factors and mental toughness in South Sumatra Karate athletes is low because the correlation coefficient value is 0.103, while the contribution of implementation is 11%. The relationship between external factors and mental toughness in South Sumatran Karate athletes is strong because the correlation coefficient value is 0.607 while the contribution of implementation is 61%. There is a simultaneous relationship between internal and external factors and mental toughness in South Sumatran Karate athletes with a fairly strong correlation coefficient level of 0.569 with an application contribution of 59%.

Keywords: Karate Athletes's Mental Toughness


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INTRODUCTION

South Sumatra PPLPD karate athletes are athletes with potential who are prepared to answer all South Sumatra karate achievements at the national level. In 2020, South Sumatra karate was not successful in contributing athletes to compete at the highest peak of sports performance development at the national level, namely PON Papua. All athletes did not pass the PON selection. In 2024, PON

will be held in Aceh-North Sumatra, while Pre-PON for Karate will be held in 2023 and took place last August in South Kalimantan. Forki South Sumatra sent the 5 best athletes, but the five athletes failed to carry out their duties and Forki South Sumatra returned without representatives at the upcoming 2024 Aceh-North Sumatra PON. This is certainly a problem that must be addressed by the administrators and coaches of the South Sumatra Karate team. Apart from the physical aspects, coaches must comprehensively provide a training menu that covers all the athlete's competing needs, including strengthening the athlete's competitive mentality.

Talking about the quality of the training results of South Sumatra Karate athletes, looking at the technical aspect, the researchers did not see any problems that interfered with the athletes' technique and physique. But there is one thing that researchers observed, and this is likely to be a nuisance for South Sumatran athletes in relation to athlete performance when compared with the athletes who contributed the most PON tickets, namely the athlete's training mentality and competition mentality. This problem is very dominant when viewed from the various complexities of athlete performance references in training. The researcher's assumption is certainly strengthened by Sensi Dadang Lesmana's statement that there needs to be a lot of evaluation in Pre-PON 2023, including athletes' immature readiness, athlete regeneration is not organized, athletes' flying hours, and loss of self-motivation, (Apridhani, 2023).

Mentality is a point that really supports an athlete's performance when competing. Psychological factors determine 50% of the match results, Herman in (Darmawan & Susanto, 2021). Mentality is the accumulation of good training results, the culmination of which can be implemented throughout the training performance in the matches played. This is in line with the statement that good mental health is related to good physical training (Gerber, et al., 2012). (Poor match results are a reflection of poor mental performance. On the other hand, good match results are the result of good mental performance supporting all

components of one's ability in competing. It is said (Ababillah & Faruk, 2022) that athletes must have a good mental condition to display total ability in achieving peak performance.

The characteristics of an athlete who is ready for a match is supported by mental toughness. (Jones, Hanton, & Connaughton, 2002) athletes with good mental toughness typically behave and act more optimistically, have very high concentration and self-confidence compared to their competitors, can control their emotions and behavior even under pressure. (Rupael & Topa, 2020) mental toughness provides facilities in the form of psychological superiority for athletes or sportsmen, this makes athletes perform better than their opponents and try brilliantly under pressure.

In general, the term for mental toughness is mental toughness. (Algani, Yuniardi, & Masturah, 2018) mental toughness is a collection of attitudinal, behavioral and emotional values that enable an athlete to continue to preserve and overcome obstacles, difficulties or pressure suffered, but still maintain concentration and motivation so that the athlete remains consistent in achieve the targeted match goals long ago. (Cashmore, 2008) states that mental toughness is determination at a high level, refusing to be pressured, maintaining focus in stressful situations, and having the strength to remain focused throughout the game. (Noviansyah & Jannah, 2021) revealed that an athlete who has good mental toughness will certainly be able to control negative emotions within himself and be able to exercise control even though the athlete is under pressure. Athletes who have a tough mentality are characterized by self-confidence, determination and good work control.

Mental toughness is a very important factor for athletes, (Mahoney, at.al, 2014) that one of the factors that is considered important that must be embedded in athletes when in a competition is mental toughness. Gucciardi, et al in (Mas'ud, Zainuddin, & Firdaus, 2022) stated that mental toughness is a set of values, attitudes, behavior and emotions that enable athletes to survive and face all kinds

of obstacles, obstacles or pressure they experience. (Hardiansyah & Masturah, 2019) mental toughness is translated as a personal capacity that can create and improve both subjective and objective performance even under pressure.

The most important aspects of mental toughness are known as (control, challenge, commitment and confidence), (Crust & Clough, 2011). That there are three aspects of mental toughness that a person or athlete has, namely self-confidence, determination and self-control, (Sheard, Golby, & Wersch, 2009). That athletes who have mental toughness can be seen from their possession of four dimensions consisting of thrive through challenge (able to develop with challenges), sports awareness (awareness to continue exercising), tough attitude (having a positive attitude). tough) and desire success (having the desire to succeed), (Gucciardi, Gordon, & Dimmock, 2009).

There should not be a single psychological symptom that interferes with the athlete's performance, so that the athlete can really focus on each game until the match is completely finished. Research, for example, was revealed by Weinberg & Gould in (Nugraha, Sugihartono, & Illahi, 2021) where the discovery is that the success and failure of players in sports, performance is determined by a combination of physical and psychological factors, even for certain branches, psychological factors reach 80% to 90%, which is very determining. (Cowden, Crust, Tibbert, & Jackman, 2020) with the title "Mental toughness development and training in sport". In this research, researchers focus on developing forms of mental toughness development and training for athletes in sport. The novelty of the researchers' research with this research is that the researchers measured and investigated the mental resilience disorders of karate athletes. (Ikham, Jufri, & RIdfah, 2020) with the title "mental toughness and competitive anxiety in UNM Karate Athletes. In this study, researchers focused on analyzing competitive factors in relation to athletes' mental toughness. Meanwhile, researchers' novelty in research is to look for the causes of disturbances and measure the influence of the causes of these disturbances.

The factors that are feared will interfere with the athlete's mental toughness in training at the South Sumatra Karate Athlete can be viewed from two factors, namely internal factors and external factors. Internal factors are factors that arise in the athlete's desires or something that the athlete is aware of because of his own potential, which is why I as an athlete must have motivation to train, have fighting power and have self-confidence to continue to develop to achieve the highest achievements. Meanwhile, external factors are factors that arise outside the athlete's authority, arise because they are beyond the reach of the athlete's will, for example the athlete's environment, the health of the organization under the athlete's auspices, guarantees for the athlete's future and so on. It is said (Romadhon, Akbar, & Rustiadi, 2016) that athletes' achievement both endogenously and exogenously, these factors greatly influence athlete performance and athletes must ensure that these factors do not disturb the athlete's mood and mental stability in training and competitions. Through this research, researchers are trying to investigate the two factors above which are disorders and their relationship with mental toughness in South Sumatra Karete athletes.

METHOD

When the research was carried out in August 2023 with the object research are South Sumatran Karate athletes who are being prepared for the Aceh-North Sumatra PON projections. The research population was all karate athletes from South Sumatra, with a projection of PON Aceh-North Sumatra totaling 21 athletes. The sample was taken from the total population considering the population is limited so the sample in this study was 21 Karate athletes. This type of research is quantitative research with the application of correlational methods. The correlational method is used as a basis for finding the value of the influence of the causal relationship given between variables. Below can be described the conceptual framework paradigm used as a research reference:

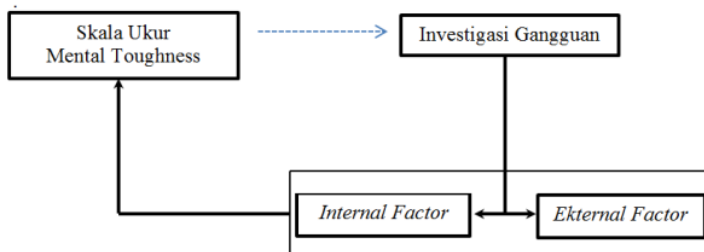


Figure 1. Conceptual Framework

Data collection uses psychological tests, namely mental toughness psychological tests before being connected to variables, and mental toughness psychological tests after being connected to internal and external variables. The number of valid questions was 18 questions with a reliability level above 0.607 with a strong relationship. Data analysis is parametric analysis of partial and simultaneous correlation tests.

RESULT AND DISCUSSION

Deskription of Research Data

The research data was obtained from the results of a questionnaire distribution, where the questionnaire in question was the mental toughness questionnaire as a variable (Y), investigation of internal factors of mental toughness as a variable (X₁) and investigation of external factors of mental toughness as a variable (X₂). From the results of data distribution on 21 South Sumatran Karate athletes, the data for each was described variables below:

Athletes' Mental Toughness Frequency

Table 1. Frequency of the Mental Toughness Scale for Athletes

Interval	Kriteria	Frekuensi
90-100	Perfect	3
75-89	Good	12
65-74	Normal	5
55-64	Pretty Normal	1
< 54	LessNormal	0

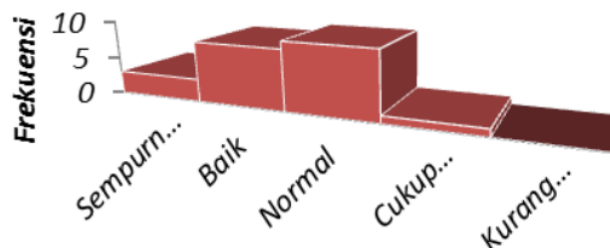


Figure 2. South Sumatra Karate Athlete's Toughness Mental Diagram

Based on the table and diagram above, it can be explained that there are 3

South Sumatran karate athletes who have perfect mental toughness, 8 people with good criteria, 9 people with normal criteria, 1 person quite normal and there are no athletes with abnormal criteria.

Frequency of Investigation of Internal Factors

Table 2. Frequency of Investigation of Internal Factors

Interval	Kriteria	Frekuensi
90-100	Very Annoying	2
75-89	Bother	6
65-74	Normal	7
55-64	Quite Annoying	5
< 54	Do Not Disturb	1

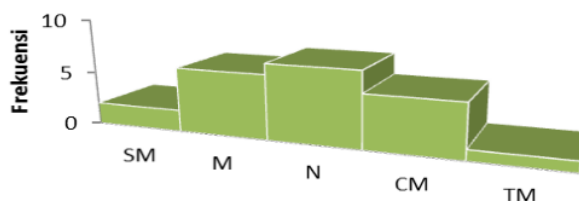


Figure 3. Perception Diagram of Internal Factors

Based on the table and diagram above, it can be explained that there are 6

South Sumatran karate athletes who feel that internal factors really interfere with the athlete's mental toughness, 6 people feel that they are disturbing, 7 people feel

that internal factors are normal, 5 people feel that internal factors are quite disturbing, and 1 person felt that it did not interfere with mental toughness.

Frequency of Investigation of External Factors

Table 3. Frequency of Investigation of External Factors

Interval	Kriteria	Frekuensi
90-100	Sangat Mengganggu	7
75-89	Mengganggu	10
65-74	Normal	3
55-64	Cukup Mengganggu	1
< 54	Tidak Mengganggu	0

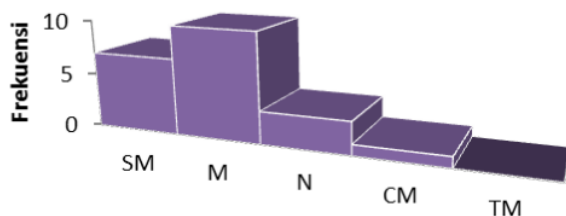


Figure 4. Perception Diagram of External Factors

6

Based on the table and diagram above, it can be explained that there are 7 South Sumatran karate athletes who feel that internal factors really interfere with the athlete's mental toughness, 10 people feel that they are disturbing, 3 people feel that internal factors are normal, 1 person feels that internal factors are quite disturbing and not There are athletes who feel that external factors do not bother them.

Research Data Analysis

Table 4. Descriptive Statistics

	N	Min	Max	Mean	StDev
Internal	21	53	94	73,28	10,028
Eksternal	21	64	92	83,92	7,703
Toughness	21	62	92	77,30	7,541
Valid N (listwise)	21				

Based on the information in the table above, it can be seen that the mean value of mental toughness possessed by South Sumatra karate athletes is 77.30%

with good criteria, the mean value of internal factor interference is 83.92% with normal criteria, and the mean value of external factor interference is 77.28% with disturbing criteria.

Relationship Contribution (X_1) dengan (Y)

9

Table 5. Model Summary (X_1 dengan Y)

Model	r	r Square	Adjusted r Square	Std. Error of the Estimate
1	.103 ^a	.011	.041	7,695

a. Predictors: (Constant), Internal

The table above shows that the r value for (X_1 with Y) is 0.103, with a correlation coefficient between 0.00-0.199 with a very low level of relationship, while the contribution of implementation is 11%.

Relationship Contribution (X_2) dengan (Y)

2

Table 6. Model Summary (X_2 dengan Y)

Model	r	r Square	Adjusted r Square	Std. Error of the Estimate
1	.607 ^a	.061	-.041	7,692

a. Predictors: (Constant), Eksternal

The table above explains that the r value for (X_1 with Y) is 0.607, with a correlation coefficient between 0.60-0.799 with a strong relationship level, while the contribution of implementation is 61%.

Multiple Analysis (X_1, X_2 with Y)

2

Table 7. Model Summary (X_1, X_2 dengan Y)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.569 ^a	.059	.079	7,834

a. Predictors: (Constant), Internal, Eksternal

The table above explains that the R value for multiple relationships between (X_1, X_2 and Y) is 0.569 in the correlation coefficient interval of 0.40-0.599 with a fairly strong level of relationship, while the application contribution is 59%.

DISCUSSION

Investigation of disturbance factors related to athletes' mental toughness is based on two variables, namely internal factors and external factors. Internal factors are disturbances that occur due to the athlete's own behavior. This is an example of the athlete being a person who wants to develop despite many challenges, but the attitude and awareness of actions shows that the athlete wants success. Athletes who have the above criteria are athletes who experience mental toughness disorders, and of course this is very dangerous for the athlete's continued performance. However, athletes who have good mental toughness can generally show good performance during training, competitions and even in everyday life (Hardiansyah & Masturah, 2019). Meanwhile, external factors are factors that originate from external influences, or occur beyond the reach of the athlete's internal capacity, for example mental toughness disorders caused by wrong environmental policies. Considering that wrong policies by the environment will have an impact on the emergence of anxiety in athletes, this happened in research cases (Fatimah & Apriyanty, 2022) where several subjects felt uncomfortable when playing, the game became hesitant and lacked confidence, this happened because the existence of negative evaluations from outside which causes pressure to arise within the athlete.

Judging from the explanation above, researchers illustrate that the current condition of South Sumatran athletes is not good, including Karate athletes. Considering that disturbances that can cause a lack of confidence, self-confidence and the possibility of loss of motivation in athletes are very likely to occur in the current situation in South Sumatra sports development. Therefore, through this research, researchers conducted an investigation and linked whether mental disorders to South Sumatran athletes experienced mental toughness disorders caused by internal and external factors.

Mental toughness measurements carried out by researchers showed that the average mental toughness of South Sumatran Karate athletes was 77.30% with

good criteria. This measurement was carried out in a situation where the athlete had not been influenced by the internal and external factor questionnaire, meaning that the researcher obtained pure information regarding the mental toughness possessed by real South Sematra Karate athletes. However, there are different contributions and relationships after researchers combine the possibility of mental toughness disorders suffered by athletes, after researchers describe the conditions that occur as a result of internal and external factors.

Based on the research findings, it was found that the internal factor of mental toughness has a low relationship in athletes, considering that its application contribution is only 11% with a correlation coefficient of 0.103. The findings of this research illustrate that mental toughness disorders occur in athletes, but the relationship is very low if it is attributed to the lack of self-confidence, loss of motivation or desire to perform well because the cause is the athlete himself. If we look at the description of the distribution of data achieved based on the perception of mental toughness due to its direct relationship to the athlete's personality, an average value of 73.28% is found, where this condition is normal, this indicates that athletes are very likely to be able to control behavior related to their best performance so that Athlete's mental toughness can be well maintained.

On the other hand, the factor that interferes with the mental toughness of South Sematra Karate athletes is that external factors have a greater relationship value when compared to internal ones. This is illustrated by the fact that the relationship between external factors and athletes' mental toughness is 61% with a strong correlation coefficient of 0.607. The findings of this research illustrate that South Sumatera Karate athletes have a strong relationship when symptoms of mental toughness occur which are caused more by external factors compared to internal factors.

External factors are factors that have a more dangerous level in relation to athletes' mental toughness, this is very basic, considering that external factors are

factors that underlie the emergence of worry, anxiety, and even reluctance for athletes to display their best performance on the field. Remembering as stated by (Gucciardi, Gordon, & Dimmock, 2009) that the key to mental toughness in athletes is motivation, concentration, self-confidence, positive attitude, determination and perseverance. Meanwhile, athletes who are mentally disturbed due to bad influences from the social environment, for example wrong and protracted policies from management, or even unclear future as a result of there being no clear guarantees for athletes, of course this creates deep anxiety in athletes. The explanation above is also reflected in research conducted by (Hafidz, Suryanto, & Priambodo, 2022) where the study was based on the uncertainty of athlete status at institution.

CONCLUSION

Based on the research findings, the conclusions in this study are a) There is a relationship between internal factors and mental toughness in South Sumatran Karate athletes with a low correlation coefficient level of 0.103 with an implementation contribution of 11%. b) ¹ There is a relationship between external factors and mental toughness in South Sumatra Karate athletes with a strong correlation coefficient level of 0.607 with an application contribution of 61%. c) There is a simultaneous relationship between internal and external factors and mental toughness in South Sumatran Karate athletes with a fairly strong correlation coefficient level of 0.569 with an implementation contribution of 59%.

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