

PSYCHOLOGY

CANDRA WIDYASTUTI^{1(ABCDEF)}, DIMYATI^{2(ACDEF)}

¹ Departemen of Sports Science, Postgraduate Program of Yogyakarta State University (Indonesia)

² Departemen of Sports Science, Postgraduate Program of Yogyakarta State University (Indonesia)

Corresponding authors: Candra Widyastuti, Departemen of Sports Science, Postgraduate Program Yogyakarta State University, Indonesia

Address: Yogyakarta, Indonesia. e-mail: candrawidiastuti3@gmail.com, Mobile: 081903727088

Comparison of Psychological Skills Between Pencak Silat and Karate

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Key words: psychological skills, martial arts, *pencak silat*, *karate*

Abstract

Background. The psychological skills of athletes have an important role in the achievement of art sports. However, there has been no scientific formation regarding the psychological skills of Indonesian *pencak silat* martial arts and *karate* athletes competing in the 2018 Asian Games

Aim. The aim of this research was to compare the psychological skills of Indonesian *pencak silat* martial arts and *karate* athletes who competed in the 2018 Asian Games.

Method. Quantitative research methods, using ex-post fact methods with research design is retrospective causal-comparative design. Samples used are 12 martial arts karate athletes and 22 Pencak silat athletes with a total sample of 34 athletes. The instruments used in this research were The Psychological Skills Inventory for Sports (PSIS) which consists of 6 assessed, aspects: motivation, trust, anxiety control, mental preparation, importance of the team and concentration. Analysis of differences in the characteristics of psychological skills of athletes using the Mann-Whitney Test.

Result. The research showed the value of Mann-Whitney $_{Count} = 129$ with the Sig.value = 0.914. So the Sig.value = 0.914 > 0.05.

Conclusion. There are no significant differences in the characteristics of the psychological skills of *pencak silat* and *karate* athletes. However, by examining more deeply the psychological skills that can be used as a reference for developing strategies, and in order to obtain the best results in competition it is better to use an experienced psychology coach in martial art teams to prepare the athletes mentally and psychological.

Introduction

Psychological skills are one term including many psychological abilities which can help maximize an athlete's appearance [Weinberg, Gould 2010]. It was further said that the importance of psychological skills can be seen in mental toughness which involves the ability of athletes to overcome stress, control their focus, return from failure and face difficulties. Research related to the role of psychological skills in facilitating athlete appearance by interviewing seven elite athletes and their parents and the results of athlete's performance in sports are multidimensional skills, but psychology is the main determinant of them which appears as a gifted and well-maintained superiority [Button, Collins 2010]. The literature review reveals that psychological

skills are important among athletes and that there is the urgency to examine and apply psychological skills training more deeply to achieve expected performance [Einarsson 2018].

The phenomenon of a brilliant athlete's achievements is the main goal in a sports competition. Data from the literature allow us to make the assumption that there several things that must be considered related to what factors can cause an athlete's achievement to increase. Psychological skills include several factors, such as the level of performance in the competition which must include personality factors, anxiety and coping strategies [Ruch 2006]. In a sports competition, an athlete must have the psychological and mental characteristics needed to have achievements, including the martial arts sports. Other personal characteristics of a

successful athlete include the level of self-motivation, self-awareness, and self-control, all components that are highly desirable to meet the high physical and mental demands of this sport [Chung, Lee 1994]. Martial arts sports lead to various fighting systems originating from Asia and interpreted as empty-handed battles [Winkle, Ozmun 2003]. One of the popular sports in Asia is karate. Karate is a martial art that has taken root in the world. In addition to karate, pencak silat is also a branch of martial arts that developed in Asia [Thunder 2016]. However, pencak silat is one of the new martial arts sports that has gained international recognition [Aziz, Tan, Teh 2002].

Previous studies on the psychological skills in karate have found an attitude tendency towards opponents, these attitudes have an important role [Sabina *et al.* 2014]. Karate is a martial art that focuses on self-defense and health improvement that has been developed mainly in Japan. It is also said that karate has a positive impact on the development of athletes which is characterized by five factors, for example willingness, active, physical, social and emotional. Karate has shown its psychological qualities such as fighting spirit, creativity, practical intelligence, control and self-control capacity, the spirit of sacrifice, intelligence, motivation, combat power, aggressiveness, tenacity, and quick thinking [Sabina *et al.* 2014].

The level of aggression is lower in karate martial arts athletes compared to non-athletes [Boostani *et al.* 2011]. However, karate helps in developing characteristics such as awareness, perseverance and patience, self-confidence, teamwork, the ability to overcome difficulties, self-control and self-discipline, courage and honesty [Lakes, Hoyt 2004]. Similar to karate, there are also several factors in pencak silat that support the development of psychological aspects, including self-confidence, training mental endurance, developing self-awareness, a knight's soul, and higher discipline and tenacity [Gristyutawati, Purwono, Widodo 2012].

The results of the research conducted [Hastuti 2013] on athletes who were fostered at the Student Education and Training Center (PPLP) showed that 88.9% have good motivation; (55.6%) of the psychological aspects of self-confidence are quite good; anxiety control with poor category, 44.4%; (55.6%) of the psychological aspects of mental preparation are good; while both the psychological aspects of the team's attention and concentration respectively (55.6%) with a fairly good category. Taekwondo athletes were totaling five people, 60% of them have very good motivation; on the psychological aspects of self-confidence, control of anxiety and mental preparation of each (60%) included in the good category; while the psychological aspects of the team's attention and concentration (60%) are categorized quite well.

At present, research on pencak silat and karate have involved many sports sciences to improve their achieve-

ments. However, research related to psychological skills in Indonesian national team athletes in the pencak silat and karate sports branches competing in the 2018 Asian Games has never been done. However, research related to conditions that explain the socio-psychological results of martial arts is also very limited [Vertonghen, Theeboom 2010]. Likewise, the research of the characteristics of psychological skills of martial arts athletes are associated with very limited achievements [Deaner, Silva 2002; Vealey 2002].

Referring to the facts above both in pencak silat and karate, psychological skills are very important to be developed as well as for renewal of the research. According to the authors' best knowledge, this is the first attempt to uncover important factors that can be comparing psychological skills of pencak silat and karate martial arts athletes so that by conducting this research, it is expected that the results of the research can be used as a reference for coaches, players and all parties involved in the field of sports. The main objective of this research is to identify, analyze and compare the psychological skills between pencak silat and karate competitors.

Method

The method used in this research was a retrospective causal-comparative design on *ex post facto* research. The research tried to reveal the comparative characteristics of psychological skills of karate and pencak silat athletes who competed in the 18th Asian Games.

The sample of this research amounted to:

Sport	Gender	Total	Age
Karate	male	6	21-24
	female	6	
Pencak silat	male	13	21-24
	female	9	

Data retrieval was conducted when athletes were taking a break at a hotel, for ten days (August 26 to September 4, 2018). Before the athletes fill out the instruments, they receive a brief explanation of the objectives and significance of filling out instruments that are conducted honestly in accordance with the athlete's psychological condition. After the data is collected, the next step clarifies and compares the data characteristics of the psychological skills of karate and pencak silat athletes.

The instrument of this research uses the scale of The Psychological Skills Inventory for Sports (PSIS-R-5), which was adopted from Mahoney, *et al.* (1987). This instrument consists of 44 items that reveal 6 aspects of psychological skills, as follows: (1) motivation (8 items); (2) trust (8 items); (3) anxiety control (8 items); (4)

mental preparation (6 items); (5) the importance of the team (7 items); and (6) concentration (7 items). This instrument in its development experienced pros and cons (Tenenbaum, et al., 2012). Therefore, before being used as an instrument in this research, the following steps were first carried out: (1) translation by English experts into Bahasa Indonesian; (2) instruments that have been translated are then valued by 3 experts; and (3) the next step is tested on 76 athletes who have similar characteristics to the research respondents and not the part studied. Reliability and validity of the results of trials on psychological skill instruments are listed in table 1.

Table 1. Validity and Reliability of Test Results Instruments

Psychological Skills	Number of items	Coefficient of Validity (Aiken's V)	Korf Reliability (Cronbach's Alpha)
Motivation	8	0,679	0,792
Self Confidence	8	0,636	0,775
Anxiety Control	8	0,779	0,914
Mental Preparation	6	0,839	0,921
The importance of the team	7	0,665	0,803
Concentration	7	0,731	0,856

Table 1 shows that instruments of psychological skills are valid and reliable. The test results instruments were used for research on pencak silat and karate athletes.

Data Analysis Technique

Data analysis uses two approaches, namely quantitative and descriptive. Quantitative analysis is used to determine the athlete's psychological skills. After the data is collected, the data analysis stage is carried out. The data analysis phase includes: (1) checking the collected data; (2) scoring the subject answers to the instrument items. Each question item consists of five alternative answers using a Likert Scale, starting from a score range of 1 (never) to a score of 5 (always), giving attention to the nature of the instrument items whether favorable or unfavorable; (3) adjusting the data with the number of items in each aspect of the psychological skills measured; (4) checking data according to the concept; (5) analyzing data; (6) interpreting data analysis results. (7) make the criterion based on the average and ideal standard deviation to know each characteristic of psychological skills, and (8) the results of the analysis are compared with predetermined criteria, so that psychological skills can be categorized as very high, high, medium, low and very low

Results

A. Characteristics of Psychological Skills of Pencak Silat

Psychological characteristics of Pencak Silat Athletes in the 2018 ASIAN Games, XVIII Asiad are presented in Table 2 as follows.

Table 2. Psychological Characteristics of Pencak Silat Athletes in the 2018 ASIAN Games, XVIII Asiad

No	Aspect	Score (scale 1-5)	Average Score	Category
1	Motivation	4,56	36,5	Very High
2	Self Confidence	3,95	27,7	High
3	Anxiety Control	3,44	24,0	High
4	Mental Preparation	3,90	23,4	High
5	The importance of the team	3,47	13,9	High
6	Concentration	3,67	22,0	High
	Total		147,5	High

Psychological Characteristics of Pencak Silat Athletes has a mean of 147.5, and standard deviation of 7.7506. The psychological characteristics of the Pencak Silat Athletes of 147.5 and was categorized as: Motivation was the highest psychological aspect for athletes of pencak silat and other five aspects are in high category. However, table 3 shows that the lowest aspect is anxiety control with an average score of 3.44. The results of the scrutiny analysis of each questionnaire item show that pencak silat athletes often feel panicked before appearing in the match. Pencak silat athletes also feel nervous when they want to appear in a fight. Then before the competition, athletes also feel very anxious.

B. Characteristics of Karate Psychological Skills

Psychological characteristics of Karate Athletes in the 2018 ASIAN Games, XVIII Asiad are presented in Table 3 as follows.

Table 3. Psychological Characteristics of Karate Athletes in the 2018 ASIAN Games, XVIII Asiad

No	Psychological aspects	Average Score	Score	Category
1	Motivation	4,64	37,08	Very High
2	Self Confidence	3,75	26,25	High
3	Anxiety Control	3,40	23,83	High
4	Mental Preparation	4,17	25,00	High
5	The importance of the team	3,00	13,83	High
6	Concentration	3,75	22,5	High
	Total		148,50	High

The characteristics of the psychological skills of karate athletes have an average of 124.66 and a standard deviation of 9.98. So the average score of a characteristic of the psychological skills of karate athletes at 148.50 is in high category.

Motivation was the highest psychological aspects for athletes of karate and other five aspect is in high category. However, table 4 shows that the lowest aspect is the importance of a team with an average score of 3.00.

C. Comparison

Hypothesis Test

Hypothesis testing is conducted to determine the differences in the psychological skills of karate athletes with pencak silat athletes. Hypothesis testing is conducted using the **Mann-Whitney Test**. This is because the number of samples between karate and pencak silat differs greatly and the variance scores of psychological skills are not homogeneous.

	N	Mean Rank	Sum of Rank	Mann-Whitney U	P Value
Pencak Silat	22	17,75	213,00	129,00	0,914
Karate	12	17,36	382,00		

In Figure 1 above, there are six aspects studied: motivation, self-confidence, anxiety control, mental preparation, the importance of the team and concentration. The research results showed that the psychological skills of Indonesian pencak silat and karate athletes did not have a significant difference in each aspect and overall aspects.

Table 4. Comparison result psychological skill between pencak silat and karate

Psychological aspects	Pencak Silat	Karate
Motivation	0,6	0,59
Self confidence	0,68	0,95
Anxiety control	0,52	0,45
Mental preparation	0,46	0,39
The importance of the team	1,14	1,08
Concentration	0,62	0,72

Discussion

In this research, athlete’s psychological skills seemed to have a positive impact on athlete’s personality based on 6 aspects assessed, the aspects of motivation, trust, anxiety control, mental preparation, the importance of the team and concentration. In accordance with previous research that reported the positive impact of training martial arts on personality [Vertonghen, Theeboom 2010]. Karate has shown the impact of its psychological skills training on fighting spirit, creativity, practical intelligence, capacity for control and self-control, the spirit of sacrifice, intelligence, motivation, combat power, aggressiveness, tenacity, quick thinking, etc. [Deliu 2008]. Furthermore, the practice of martial arts enhances socialization [Lantz 2002] intellectual abilities [Ryan 2008] and morality [Lantz 2002]. In addition, karate helps to develop characteristics such as awareness, perseverance and patience, self-confidence, teamwork, ability to overcome difficulties, self-control and self-discipline, courage and honesty [Kalinowski, 1976; Lakes, Hoyt 2004]. The results of the research are similar to the research conducted by Zaggelidis, Mavrovouniotis, Argiriadou, and Ciucurel [2013] in their research on the psychological

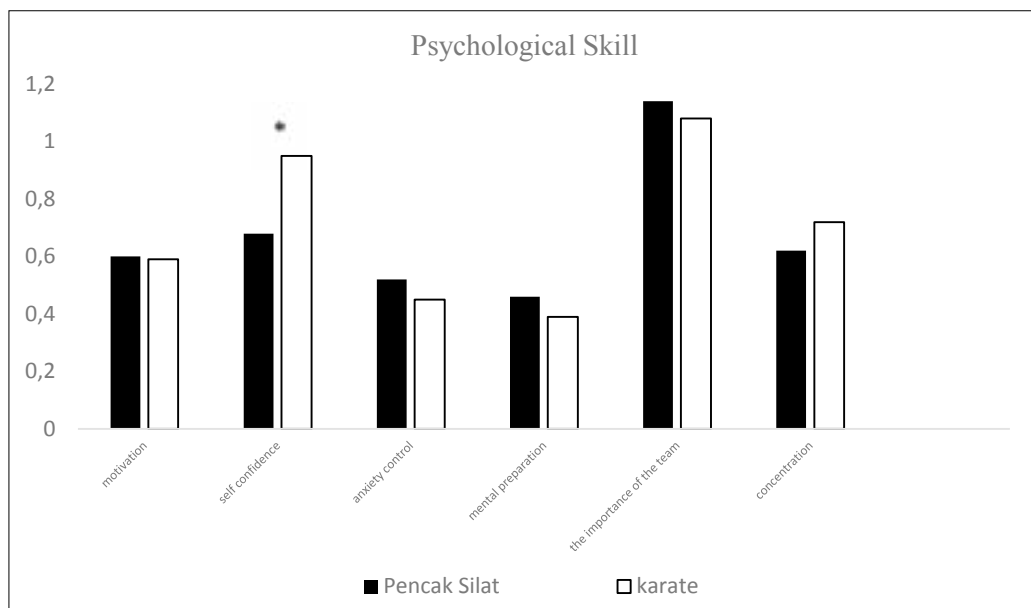


Fig. 1. Comparison result psychological skill between pencak silat and karate

skills of judo athletes. From the literature review above, it can be understood that the situation in the world of sports, especially martial arts, requires an intense focus of internal and external interference, quick decision making, and adjusting to changing strategies [Anshel, Payne 2006; Rushall 2006].

The research results showed that the characteristics of the psychological skills of the Indonesian pencak silat and karate athletes which included aspects of motivation, trust, anxiety control, mental preparation, the importance of the team, and concentration were high. The results of this research are reinforced by the opinion of Boostani *et al.* [2011] who states that psychological skills are one of the main factors in competition. Weinberg & Gould [2011] assert that psychological skills such as concentration, self-confidence, emotional control and focus on goals will be very useful for both athletes and coaches. Deliu [2008] states that karate has shown psychological qualities such as fighting spirit, creativity, practical intelligence, control capacity and self-control, the spirit of sacrifice, intelligence, motivation, combat power, aggressiveness, tenacity, quick thinking, etc. Along with karate, in pencak silat there are also several factors that support the development of psychological aspects, among others: self-confidence, training mental endurance, developing self-alertness, knight soul, and higher discipline and tenacity [Gristyutawati, Purwono, Widodo 2012].

Differences in Characteristics of Psychological Skills of Karate and Pencak Silat Athletes

Based on the data above, it shows that overall there is no significant difference related to the psychological skills of pencak silat and karate athletes. However, there is one aspect of psychological skills that have a high percentage from both branches, namely motivation. Karate reaches 4.64 in the motivation aspect which is in the very high category and the other five psychological aspects are in a high category. However, Figure 1 shows that the lowest aspect is the importance of the team with a mean score of 3.00 which shows that athletes in karate sports often feel that team spirit is not something important. Motivation was the highest psychological aspect for athletes of pencak silat and other five aspects are in a high category. However, Figure 2 shows that the lowest aspect is anxiety control with an average score of 3.44. The results of the analysis of each questionnaire item show that pencak silat athletes often feel panicked before appearing in the fight. Pencak silat athletes also feel nervous when they want to appear in a fight. Then before the competition, these athletes also feel very anxious. Both of these results showed that athletes from both types of sport had good motivation. In the world of sports and physical activity which is able to manage self-motivation and external motivation well is the power to achieve optimal achievement, goal setting is one strategy that can be developed to increase motivation [Robert, Kristiansen 2010].

Conclusions

This paper aimed to compare and analyze critical factors of psychological skills between pencak silat and karate. However, from several aspects studied, the motivational aspects of the two sports are in the very high category and the other five aspects fall into the high category. Furthermore, based on the SPSS output above, it can be seen that the Mann-Whitney U_{count} value is = 129 with the Sig. value = 0.914. Because of the value of Sig. = 0.914 > 0.05, then H_0 is accepted. So, it can be concluded that at the 0.05 significance level **there is no significant difference** in the psychological skills characteristics of the karate athlete athletes with the pencak silat athletes. This research is expected to be used as a renewal related to data on psychological skills of athletes in martial arts and can be used as a basis for trainers to develop strategies and programs related to the psychology of athletes to improve achievement.

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Porównanie umiejętności psychologicznych między zawodnikami Pencak Silat i Karate

Słowa kluczowe: umiejętności psychologiczne, sztuki walki, *pencak silat*, *karate*

Abstrakt

Tło. Umiejętności psychologiczne sportowców odgrywają ważną rolę w osiąganiu wyników w sportach walki. Nie ma jednak danych naukowych badających umiejętności psychologiczne indonezyjskich sportowców praktykujących sztuki walki *pencak silat* i *karate*, którzy startowali w Igrzyskach Azjatyckich 2018. Cel. Celem niniejszego badania było porównanie umiejętności psychologicznych indonezyjskich zawodników *pencak silat* i *karate*, którzy startowali w Igrzyskach Azjatyckich w 2018. Metoda. Zastosowane ilościowe metody badawcze, wykorzystujące metody *ex post facto* w projekcie badawczym, stanowiły retrospektywny projekt porównawczy. W badaniu udział wzięło 12 zawodników *karate* oraz 22 zawodników *pencak silat*, a łącznie wzięło udział 34 sportowców. Narzędziem wykorzystywanym w tych badaniach był Spis Umiejętności Psychologicznych w Sporcie (PSIS), który składał się z 6 ocenianych aspektów: motywacji, zaufania, kontroli lęku, przygotowania psychicznego, znaczenia zespołu i koncentracji. Analizę różnic w charakterystyce umiejętności psychologicznych sportowców przeprowadzono za pomocą testu Manna-Whitneya. Rezultat. Badania wykazały wartość licznika Manna-Whitneya = 129 z wartością Sig.=0,914. Tak więc wartość Sig.=0,914 > 0,05.

Wniosek. Nie wykazano istotnych różnic w charakterystyce umiejętności psychologicznych zawodników *pencak silat* i *karate*, ale badając głębiej umiejętności psychologiczne, które mogą być wykorzystane jako punkt odniesienia dla tworzenia strategii i w celu uzyskania najlepszego wyniku w zawodach, lepiej skorzystać z pomocy doświadczonego trenera psychologa w grupach trenujących sztuki walki do przygotowania psychicznego i psychologicznego sportowców.