

PSYCHOLOGY

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Exploring the Psychological Skills of Indonesian *Pencak Silat* Athletes at the 18th Asian Games

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Abstract

Background. This is a study of the outstanding achievements of the Indonesian *Pencak Silat* athletes at the 18th Asian Games (AG) sporting event. There are many aspects that determine sports success; one of which is the athletes' psychological skills factor. The purpose of this study is to explore psychological skills of Indonesian *Pencak Silat* athletes at the 18th Asian Games.

Method. This study employed a retrospectives causal-comparative design method. The psychological aspects and achievements of *Pencak Silat* athletes are not yet available, and it therefore became an interesting exploration of *Pencak Silat* athletes' psychological skills. The sample was 22 *Pencak Silat* athletes, with an average age of 22.8 years. The instrument employed was The Psychological Skills Inventory for Sports (PSIS). The data analysis techniques employed were descriptive statistics and document analysis.

Results. The results show that the psychological skills of motivation, confidence, anxiety control, mental preparation, team emphasis, and concentration in a *Pencak Silat* athlete are high.

Conclusion. The results show that the six aspects of a *Pencak Silat* athlete's psychological skills are high. This is new evidence that strengthens the theory that a *Pencak Silat* athlete's psychological skills, which are special elements of sports psychology, contribute to achieving success.

Introduction

Martial arts are a general term used to describe the art of combat and self-defense, usually developed in Asian countries [Zembura 2015]. Winkle and Ozmun [2003] stated that martial arts refer to various combat systems originating from Asia, however there is no clear agreement on their definition. According to their findings however, this sport is usually defined as bare hands combat: a form of fighting or defending with punches, sweeps, kicks, blocks and throws. Anshel and Payne [2006] agreed that martial arts are battle systems that originated in Asia, existing for thousands of years. They further stated that recently, there are more than 30 forms of martial arts, each consisting of their own philosophy and style. *Pencak Silat* is a martial arts sport originating from Indonesia, and unlike the other martial arts branches, is not internationally as popular as judo, karate and taekwondo. Its lack of popularity means that it had not been played at the Olympics, and only just appeared at the 18th AG.

The 18th AG consisted of 15 participating countries in *Pencak Silat* sport: Malaysia, Brunei, Singapore, Vietnam, Philippines, Uzbekistan, Pakistan, India, Kyrgyzstan, Japan, Nepal, Laos, Thailand, Timor Leste, Iran and Indonesia. Data from the Indonesian Asian Games Organizing Committee (INASGOC) in 2018 concluded that Indonesia achieved 88 medals including 30 gold, 22 silver, and 36 bronze ones. In *Pencak Silat*, Indonesia dominated with 14 gold medals. This medal achievement is the best in the history of Indonesia's participation in AG [INASGOC 2018].

It is very interesting to explore the myriad of factors that influence the success of sports achievements in order to understand the phenomenal success' of the Indonesian *Pencak Silat* athletes. Nossek [1982] stated that achieving optimal performance is more than hard work, funds, organizing, and management. Sports psychology is one of the seven main theoretical fields that became the body of sports science [Haag 1994]. It has often examined the role of psychology applications for

the success of athletes both as individuals and in teams [Cruickshank & Collins 2012b]. Lim and O'Sullivan [2016] stated that the importance of psychological skills for optimal sports achievement had been implied through many previous studies.

Anshel [2003] stated that sports psychology researchers have tried to develop personality profiles of athletes that can predict their future achievements, without success. In various sporting events, athletes' psychological skills are considered the basis for achieving peak performance. Psychological factors are important to improve athletes' performance and personal growth, often differentiating successful and less successful athletes [Krane and Williams 2006]. Furthermore, there is a limited number of studies that successfully reveal the link between the psychological characteristics of athletes and their success in competitions [Deaner & Silva 2002]. In Indonesia, sports psychology studies are very limited, due to a lack of awareness on the importance of psychological skills [Singgih 2001]. Moreover, there are few or hardly any studies of sports psychology in *Pencak Silat*.

The psychological skills training (PST) is to assist sport participants in the development of mental skills to achieve performance success and personal well-being [Vealey 2007]. PST comprises of a systematic and consistent practice for the purpose of enhancing performance, increasing enjoyment, or achieving greater sport and physical activity satisfaction [Weinber, Gould 2011]. In order to enhance the psychological preparation of athletes, coaches and teams, a systematic PST is required [Figone 1999]. According to several studies, PST programs have been shown to be an effective strategy for improving athletic performance in a wide variety of sports [Blakeslee and Golf 2007]. In this sense, the study of PST has emerged as one of the main topics in sport psychology. Before applying the training, it is necessary to know the psychological aspects of the athlete in advance. One of the instruments commonly used to uncover aspects of athletic psychology skills is The Psychological Skills Inventory for Sports (PSIS).

Amidst the limitations, it is interesting and important to explore the psychological skills of the Indonesian *Pencak Silat* athletes. Shapie, Zenal, Parbanas, and Abdullah [2016] can use their knowledge on the psychological demands of the sport to facilitate the development of specialized training programs for optimal performance. This study provides theoretical benefits through the findings on psychological skills of *Pencak Silat* martial arts. The instrument used to explore these characteristics was adopted from Mahoney, Gabriel, and Perkins [1987], and is called 'The Psychological Skills Inventory for Sports (PSIS)'. This instrument was prepared with the intention of exploring psychological aspects: motivation, confidence, anxiety control, mental preparation, team emphasis, and concentration. Despite its disadvantages in development, it has been used to measure aspects of

the psychological skills of Olympic athletes [Tenenbaum, Eklund, Kamata 2012]. Therefore, the purpose of this study is to explore psychological skills of Indonesian athletes at the 18th Asian Games.

Method

Research Design

The method used in this study was a retrospective causal-comparative design, also known as ex post facto research.

Respondents

The sample of this study consisted of 22 Indonesian *Pencak Silat* athletes who managed to achieve medals in the Jakarta 18th AG in 2018, including 13 men and 9 women with an average age of 22.8 years. However, this study did not examine differences in psychological skills in terms of gender, because psychological skills between men and women in sports in general there is no difference.

Instrument

The instrument of this study was the scale of PSIS, adopted from Mahoney *et al.* [1987]. This instrument consists of 44 items that reveal 6 aspects of psychological skills, namely: (1) motivation (8 items); (2) self-confidence (8 items); (3) anxiety control (8 items); (4) mental preparation (6 items); (5) team emphasis (7 items); and (6) concentration (7 items). The development of this instrument came with advantages and disadvantages [Tenenbaum, *et al.* 2012], and so before being used as an instrument in this study, the following steps were completed: (1) the instrument was translated by English language experts into Indonesian; (2) the translated instrument was then validated by 3 experts; with the following expert qualifications: (a) the first expert, is an English language lecturer with expertise in Applied Linguistics, a graduate of The University of Sydney Australia, who has more than 30 years of English teaching experience; (b) the second expert is an Indonesian language lecturer who graduated from doctoral program from Gajahmada University; (c) third expert in Physical Education who graduated from the University of Colorado, doctoral program in the United States, and (3) the validated instrument was tested against 76 athletes who have similar characteristics to the respondents of the study and not included into the parts being studied. Reliability and validity of the trial results on the psychological skills instrument are listed in Table 1.

Table 1 shows that the instruments of psychological skills are valid and reliable. The instrument validity with the Aiken's V coefficient for each psychological skill are

Table 1. Instruments' reliability and validity of the trial results

Psychological Skills	Number of Items	Validity Coefficient (Aiken's V)	Reliability Coefficient (Cronbach's Alpha)
Motivation	8	0.679	0.792
Confidence	8	0.636	0.775
Anxiety Control	8	0.779	0.914
Mental Preparation	6	0.839	0.921
Team Emphasis	7	0.665	0.803
Concentration	7	0.731	0.856

Table 2. The formula of psychological skills characteristics criteria

Interval	Category
above (Mi + 1.8SD) up to (Mi+ 3SD)	Very High
above (Mi 0.6) up to (Mi + 1.8SD)	High
above (M -0.6SD) up to (Mi + 0.6SD)	Medium
above (Mi-1.8SD) up to (Mi - 0.6SD)	Low
(Mi-3SD) up to (Mi-1.8SD)	Very Low

Note: Mi = Ideal Mean; Sdi = Ideal Deviation Standard

Table 3. Indonesian AG *Pencak Silat* athletes' psychological skills

No	Aspects	Score (scale 1-5)	Average Score	Note
1	Motivation	4.56	36.5	Very High
2	Confidence	3.95	27.7	High
3	Anxiety Control	3.44	24.0	High
4	Mental Preparation	3.90	23.4	High
5	Team Emphasis	3.47	13.9	High
6	Concentration	3.67	22.0	High
	Total		147.5	High

as follows: motivation = 0.679; confidence = 0.636; anxiety control = 0.779; mental preparation = 0.839; team emphasis = 0.665; and concentration = 0.731. Reliability with the Cronbach's Alpha coefficient are as follows: motivation = 0.792; confidence = 0.775; anxiety control = 0.914; mental preparation = 0.921; team emphasis = 0.803; and concentration = 0.856. The instrument of the trial results was used for the study on the *Pencak Silat* athletes.

Procedure

This study was conducted over six months, starting with permit processing, to data collection from the AG *Pencak Silat* athletes in Jakarta. A research permit was arranged through the Director of the Postgraduate Program of Yogyakarta State University, addressed to the Ministry of Youth and Sports of the Republic of Indonesia (Cq. Deputy IV Field of Sports Achievement). After the Ministry granted the permit, it was forwarded to INASGOC and the Executive Board of the Indonesian *Pencak Silat* Association (IPSI). IPSI facilitated the researchers to hold meetings with the athletes in order to collect the data, which was carried out over a 10 day break in a hotel [August 15 to 24, 2018]. Athletes have a

busy schedule; meaning that the distribution of questionnaire instruments were given at a gradual pace instead of altogether. Before the athletes filled in the instruments, they were briefed on the purpose and the significance of answering it honestly. The next step was to clarify the data collected to assess the psychological skills characteristics of the *Pencak Silat* athletes.

Data Analysis Technique

A quantitative analysis was used to determine the psychological skills of the athletes. After the data were collected, it was analyzed with the following: (1) checking the collected data; (2) scoring the respondents' answers to the instrument items. Each question item consists of five alternative answers using a Likert Scale, ranging from a score of 1 (never) to 5 (always), the scoring took into account the nature of the instrument item, and whether it was favorable or unfavorable; (3) adjusting the data with the item number in each aspect of psychological skills measured; (4) adjusting the data checking to the concept; (5) analyzing data; (6) interpreting the data analysis results. (7) creating criteria based on the average and the ideal standard deviation in order to know each characteristic of psychological skills, and (8) comparing

the analysis results with the criteria that have been set, so that the psychological skills can be included in the category of very high, high, medium, low and very low. A high positive score indicates that the psychological skills of *Pencak Silat* athletes are high. The arrangement of criteria for the categories of psychological characteristics used the following formula: $Mi = (ST + SR) / 2$ and $SDi = (ST - SR) / 6$. The formula for determining the category of the criteria is shown in Table 2.

Results

Characteristics of *Pencak Silat* Athletes' Psychological Skills

The descriptive analysis results on six aspects of psychological skills of the Indonesian *Pencak Silat* athletes can be seen in Table 3.

Table 3 shows the aspects of motivation included in the very high category (4.56). Five other aspects of psychological skills were recorded in the high category (3.44 - 3.90). The lowest score of the six aspects is the aspect of anxiety control (3.44). Scoring the results of data analysis showed that the psychological skills of *Pencak Silat* athletes had an average of 147.5; median 145.5; mode 141; minimum value 134; a maximum value of 167, variant 60.1, and a standard deviation of 7.750. Therefore, the characteristics of psychological skills of *Pencak Silat* athletes with a score of 147.5 are included in the high category.

Literature Review in Sports Psychology Perspective

Qualitative studies use document analysis to explore the correlation between psychological characteristics and sports achievement. Davis [1989] suggested that sports psychology is a science applied in the context of sports in an effort to describe, explain and predict athletes' achievements. The aim of sports psychology is focused on the efforts to find a link between individual personalities and their participation in sports [Bird 1986]. He further emphasized that the unit of sports psychology analysis is individual behavior occurring in sports situations. Shaw, Gorely and Corban [2005] described sports psychology as a science that examines feelings, thoughts and psychological aspects related to sports or exercises to improve achievements. It examines how people's behavior in sports activities affects the personality and performance of athletes [Weinberg, Gould 2011]. Many studies in sport psychology have now been made in an effort to understand performance success [Sarpira *et al.* 2012, in Shapie *et al.* 2016].

Anshel [1990] believed that sports psychology is the study of human behavior in the context of sports achievements. Krane and Williams [2006] stated that before conducting psychological skills training, it is necessary to know what psychological conditions are needed in order

to achieve peak performance. If such conditions can be identified, then it can be used as a basis in developing a psychological training program for athletes. There are many types of interventions published in various sports psychology literature which combine cognitive strategies with certain behaviors, carried out in certain ways to facilitate sports achievements [Anshel, Payne 2006].

Based on the literature review previously described, it can be concluded that the psychological skills in athletes, coupled with exterior factors can greatly determine the athletes' performance. If the psychological aspects that need to be improved are identified and given intervention through an appropriate training program, it can contribute immensely to the achievement. Furthermore, the results of the study show the phenomenal achievement results of the Indonesian *Pencak Silat* athletes at the AG are due to the athletes having a high level of psychological skills, specifically motivation, confidence, anxiety control, mental preparation, team emphasis, and concentration. The phenomenon strengthens the theories and studies that existed; that sports achievements are strongly influenced by the psychology of the athletes, the higher the mental skills the greater the performance.

Discussion

Studies of Psychological Skills Characteristics and Sports Achievement

The results of the study showed that motivation, confidence, anxiety control, mental preparation, team emphasis, and concentration were high. The following is a discussion on the literature analysis of the documented study between each psychological skill and the athletes' achievement.

Motivation. MacNamara, Button and Collins [2010] asserted that high motivation is needed to become successful athletes in curling, hockey, javelin, judo, rowing and sculling. If an athlete in a team sport does not have motivation, it will impact the entire team's performance [Dimiyati 2018]. In sports and physical activities, the ability to manage internal and external motivation leads to optimal performance. Setting goals is one of the strategies that can be developed to increase motivation [Robert and Kristiansen 2010], and it can therefore be concluded that motivation has a central role for high achievement. The empirical evidence strengthens this notion.

Confidence. Confidence is defined as the level of certainty individuals have in their ability to be successful at sports, it is considered one of the most important requirements in achieving high sports performance [Lane 2008]. Hays, Thomas, Maynard, and Bawden [2009] found that a high level of self-confidence positively affects the athletes' thoughts, feelings and behavior, therefore encouraging a higher level of performance. Anshel and Payne [2006] believed that martial arts, such as karate, kendo,

kick-boxing, judo, and taekwondo need self-confidence in order to excel. They explain that low self-confidence increases pessimistic thinking and reduces efforts, which will ultimately lead to failure. Martial arts competitions require "managed intensity"; a short period of intense concentration and physical energy.

Anxiety Control. Singh, Sunderlal, and Ranjit [2014] found that individual sports (archery, cycling, table tennis, wrestling, fencing, athletics, weightlifting, judo, boxing and taekwondo) have lower anxiety control compared to team sports (hockey, hand ball, *kabaddi*, *sepak-takraw* and volleyball), the anxiety level of the athletes in individual sports is higher compared to that of a team [Bookani, Sadeghi, Alipour, Zarga and Aghdam 2015]. The levels of anxiety are largely controlled by the pressure of the competition, for example, international ones tend to have greater pressures compared to competitions on a national scale. Another study found that the team playing in a home stadium has a better victory, the benefits are felt by the martial arts athletes when competing as hosts, especially in judo [Ferreira Julio *et al.* 2013]. Athletes who play in their home country (host) will be more in control of their anxiety as exemplified in the 18th AG in 2018: the Indonesian *Pencak Silat* athletes had higher levels of anxiety control.

Mental Preparation. The ability to mentally prepare is a key component for high achievement [Gould, Flett and Bean 2009]. Athletes who take time to consistently mentally prepare themselves for the Olympics show better overall performance. The role of mental preparation is very important for athletes, both in times of training and matches. After eight weeks of implementing a mental exercise program, the motivation, self-confidence and performance of table tennis athletes increased [Vidic and Burton 2010]. Mental preparation is the athletes' strategy to achieve optimal performance and psychological conditions in competitions or trainings [Gould, Flett and Bean 2009]. Indonesian *Pencak Silat* athletes who perform at the AG have higher levels of mental preparation, leading to optimal results.

Team emphasis. Sports essentially require a team, even with individual sports [Gill 1986]. Furthermore, individual sports still require a team technical strategy to succeed. Every athlete is a member of a particular sports association, which routinely conducts training and matches. The martial arts athletes performing at the AG all identified the importance of team-based strategies. Team importance prioritizes the process of unity to create productivity and efficiency, this basis is what makes Indonesian athletes perform optimally at the AG.

Concentration. Concentration is the directing of attention and power towards something without exterior influence, it has a very important role in sports. All sports require concentration for high achievement [Cox 2002]. The main variable that influences concentration

is the pressure from the audience: when the athlete is met with cheers from the crowd, it can positively affect their performance [Singgih 2001]. Indonesia, as hosts of the AG, always provide full support when their own athletes compete. Athletes with high concentration will perform their best, accelerate the process of learning new skills, increase confidence, control stress and anxiety in a high level of experience, and focus better on controlled factors.

As discussed above, various studies have revealed that motivation, confidence, anxiety control, mental preparation, team emphasis, and concentration are all related to sports achievement. Literature studies further strengthen the results of the document analysis. Psychological skills are aspects that affect the success or performance of athletes [Cox 2002]. Mahoney *et al.* [1987] have identified psychological skills that potentially influence the performance: motivation, confidence, anxiety control, mental preparation, team emphasis, and concentration. Studies that compare successful and unsuccessful athletes show that those who have higher levels of self-confidence, a good concentration focus, better arousal arrangements, positive thinking and determination are more successful during performance [Weinberg, Gould 2011]. Finally, Anshel and Payne [2006] deduced that in martial arts, psychological skills play a very important role, necessary in training, competition and even afterwards, during decompression. Psychological preparation, concentration, anticipation, emotional control, self-control, self-confidence and competitiveness are aspects of the main psychological skills that martial arts athletes must possess in order to succeed.

Conclusions

Exploration of the motivation, confidence, anxiety control, mental preparation, team emphasis, and concentration of Indonesian *Pencak Silat* athletes are included in the high category of the assessment. Similarly, the results of document analysis show that the six aspects of psychological skills are positively correlated with sports performance. This is new evidence that strengthens the theory that *Pencak Silat* athletes' psychological skills which is a special object of sports psychology contributes in achieving success.

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Badanie umiejętności psychologicznych indonezyjskich zawodników *Pencak Silat* podczas 18 Igrzysk Azjatyckich

Słowa kluczowe: umiejętności psychologiczne, *Pencak Silat*, Indonezja, Igrzyska Azjatyckie

Streszczenie

Tłó. Niniejsze opracowanie dotyczy wybitnych osiągnięć indonezyjskich zawodników *Pencak Silat* podczas 18 Igrzysk Azjatyckich (AG). Istnieje wiele aspektów, które decydują o

sukcesie sportowym; jednym z nich jest czynnik umiejętności psychologicznych sportowców. Celem pracy było zbadanie tych umiejętności psychologicznych indonezyjskich zawodników *Pencak Silat* podczas 18 Igrzysk Azjatyckich.

Metoda. W pracy wykorzystano retrospektywną metodę projektowania przyczynowo-porównawczego. Aspekty psychologiczne i osiągnięcia zawodników *Pencak Silat* nie były do tej pory dostępne, dlatego też badanie stało się interesującą eksploracją umiejętności psychologicznych zawodników uprawiających ten sport. Próba obejmowała 22 zawodników *Pencak Silat*, których średnia wieku wynosiła 22,8 lat. Zastosowanym narzędziem był Inwentarz Umiejętności Psychologicznych w Sporcie (PSIS). Zastosowano techniki analizy danych: statystyki opisowe oraz analizę dokumentów.

Wyniki. Wyniki pokazują, że motywacja, pewność siebie, kontrola lęku, przygotowanie psychiczne, podkreślenie znaczenia zespołu i koncentracja zawodników *Pencak Silat* są wysokie. Wniosek. Wyniki pokazują, że sześć aspektów umiejętności psychologicznych zawodników *Pencak Silat* jest na wysokim poziomie. Jest to nowy dowód, który wzmacnia teorię, że umiejętności psychologiczne zawodników *Pencak Silat*, które są szczególnym przedmiotem psychologii sportowej, przyczyniają się do osiągnięcia sukcesu.