

Psychological characteristics of athletes in regional training center

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ABSTRACT

High achievement in sports requires behavior with certain qualities. Likewise, with successful athletes, they have superior qualities not only in terms of physical but also mentality. This study aims at examining psychological characteristic because it's one of the important factors possessed by athletes, and can influence them in. The sample used in this study are 198 East Java athletes who participates in the training center from 21 sports. The instrument used for psychological characteristics in this study is the SKPA (Scale of Psychological Characteristics for Athletes) with a factor loading value > 0.5, so that each item is valid in measuring it's dimensions, and it's known that the conbrach's alpha value for each dimension is 0.7. Of the eight psychological characteristics, the highest mean value for hard work is 16.31. And the lowest mean values for openness is 12.02. Eight psychological characteristics indicate a good category, which means that the psychology of the East Java regional training center athletes are in good condition.

Keywords: Characteristics; psychological; athlete

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INTRODUCTION

The Regional Training Center is one of the achievement development programs from the parent sports organization which is an example of coaching and developing sports achievements in accordance with Law No. 3 of 2005 concerning the National Sports System. The implementation of coaching activities needs to be clearly identified including, coaches, athletes, training programs, methods, infrastructure and facilities, sports branch organization, funding, and sports awards (Mylsidayu, 2015). The Regional Training Center held in East Java Province is part of the achievement sports development. Sport, especially in achievement sports, is an arena with a very high level of competition. Successful athletes are basically those who have advantages, not only physically but also mentally, because high achievement in sports requires behavior with certain qualities (Maksum, 2010). Likewise with successful athletes, they have superior qualities not only physically but also mentally (Darisman et al., 2021). Achievement sports is an arena with a very high level of competition.

To achieve high achievement, it takes individual characteristics that excel both in terms of physical and mental. Likewise with successful athletes, they have superior qualities not only physically but also mentally. The challenge is to close the gap where we often focus on 'hardware' and rarely on 'hardware' and 'software' to improve sports performance (Bergeron et al., 2015).

Psychological factors of athletes must be considered and formed properly. Coaches believe that mental factors are factors that influence success in sports (Weinberg et al., 2011), because the role of the coach is very important in maintaining the mental health of the athlete (Hadi, 2011), this is useful for ensuring that athletes compete in excellent condition, both physically and mentally. In the context of elite sport it consists of a variety of unique stressors (Arnold & Fletcher, 2012), such as competition (e.g. performance expectations), organizational (e.g. travel), and personal stress (e.g. family problems), which have the potential to increase the risk of mental decline in athletes (Rice et al., 2016). These triggers can be prevented and controlled, so athletes can show their best performance when competing on the field (Guntoro et al., 2020). Just as physical exercise must be balanced with adequate recovery, so psychological demands must be balanced with strategies to support good mental resilience. Because mental resilience is a core component of any culture of excellence (Schinke et al., 2018), many elite sports organizations have recently increased their focus on the mental resilience of athletes aiming to provide solutions through their sporting environment (Henriksen et al., 2020).

Not infrequently the defeat of an athlete or team in a match is not determined by physical factors, but psychological factors. This is in line with research Kreiner-Phillips and Orlick (2016) which state that the psychological factors of elite athletes have an influence on the success and failure of athletes even though these athletes have the most subtle physical similarities. Elite athletes are athletes who achieve high achievements or win in national and international championships, while non-elite athletes are athletes who have low achievements, and have never won or participated in national or international championships. Psychological factors such as high self-confidence, mental toughness, ability to copy and control anxiety, have high expectations, optimism and adaptive perfectionist, ability to overcome distractions, competitive, have a work ethic, smart, ability to achieve goals, competitiveness, commitment to vision of what it takes to succeed, imagery of weakness, ability to cope with pressure, awareness of the game, self-confidence, and motivation, play an important role in developing themselves to fulfill the athlete's potential, as well as overcoming all the obstacles they will face (Larsen et al., 2012).

This psychological factor can be termed as mental toughness, it should be an important supporting factor whether one can reach the international stage or achieve world champion status, while many other variables may also play an important role (e.g. physical ability, quality of training) (Gulbin et al., 2013). Mental toughness is a concept that has been of great interest to the general public and researchers are interested in the achievements made in various fields in the last decade. Because most scholars consider mental toughness to represent the qualities that exist in a person (Gucciardi & Gordon, 2012). Mental toughness is one of the concepts that are at optimal function and strength. It is considered an important resource for overcoming adversity and maintaining a high level of performance and function in sport (Gucciardi et al., 2015).

The study of sports psychology has been carried out by experts to find out what psychological factors shape national and even international level athletes (Gulliver et al., 2015; Mahoney et al., 2016; Nanda & Dimiyati, 2019; Nopiyanto et al., 2021; Pulungan & Dimiyati, 2019; Verburch et al., 2016). However, to the knowledge of the researchers, no one has identified eight psychological characteristics possessed by athletes, namely achievement motivation, resilience, hard work, self-confidence, emotional control, concentration, persistence, and openness at the East Java Regional Training Center. The research that has been done previously adds to our insight regarding the importance of psychological factors in athletes to support an achievement which is very important and reasonable. This adds to our insight regarding the importance of psychological factors in athletes to support an achievement. In this study, the subjects of the study are not only athletes in one sport but also elite athletes. For elite athletes, such as athletes who are members of a training center, both at the regional and national levels, participating in a competition is very important. Psychological characteristics are dispositions such as traits that can be managed and enhanced through the use of relatively long-lasting and

consistent psychological skills across various situations (Dohme, et al, 2017). Several studies on the psychological characteristics of athletes have been conducted previously.

To face a competition or tournament at the national or international level, there must be a process of intense physical and mental training. However, doing so can lead to increased pressure on elite athletes and the high demands and extensive training load present a potential threat to athletes (Rice et al., 2016), and also the peak of competition for elite athletes tends to overlap with the peak age of an athlete, thus raising the risk of mental disorders for the athlete (Gulliver et al., 2012). Based on the results of previous studies, researchers are interested in examining eight psychological characteristics possessed by athletes, namely achievement motivation, resilience, hard work, self-confidence, emotional control, concentration, persistence, and openness.

Based on some of the literature, it can be concluded that psychological factors are one of the important factors possessed by athletes and can influence them in achieving the highest achievement. Psychological characteristics are used by athletes to achieve an optimal psychological state so that it affects their performance. Therefore, the purpose of this study is to determine the psychological characteristics of East Java athletes who are members of the regional training center. This is very important, in addition to developing psychological characteristics into psychological skills so that athletes can use them in competitions or matches, also in order to support the coaching process carried out by coaches, in order to help athletes to perform optimally.

Athletes in training camps in East Java receive a balanced portion of physical and mental exercise. This is of course supported by the competence of physical trainers and the role of psychologists who are included in the training center process. Many achievements have been given by athletes to make East Java proud at the national level, and of course this supports the track record of athletes to be able to defend Indonesia in international competitions. On the basis of the many achievements of East Java athletes, this study is conducted to determine what psychological characteristics possessed by athletes at the East Java training center.

METHOD

The research method uses an ex post facto survey method with a quantitative descriptive approach. Ex post facto research is used in this study to find causes that allow changes in behavior, symptoms, or phenomena caused by an event that has already occurred (Maksum, 2018). This is used to provide a more detailed picture by identifying the characteristics of athletes at the East Java Regional Training Center. The sampling technique in this study is using purposive random sampling with inclusion criteria, namely athletes become the core team in the East Java Regional Training Center which at least competes at the national level, and in the last three years has won national and international championships. While the exclusion criteria in the sample of this study are athletes who are not members of the core team of the East Java Regional Training Center. The sample in this study amounts to 199 athletes with those from 21 sports as shown in table 1.

Table 1. Demographics of the Research Sample

Sports	Males	Females	Amount
Aeromodelling	6	1	7
Fencing	7	8	15
Athletics	8	11	19
Billiard	3	2	5
Badminton	1	1	2
Judo	2	4	6
Karate	6	8	14
Screen	3	3	6
Diving	2	2	4
Shoot	4	2	6
Rock climbing	10	8	18
Martial arts	8	7	15
Swimming	3	4	7
Beautiful Swimming	-	5	5
Dive	13	13	26

Sports	Males	Females	Amount
Windsurfing	3	3	6
Skates	8	5	13
Taekwondo	4	4	8
Flying	3	1	4
Beach Volleyball	1	-	1
Wushu	8	4	12
Total	103	96	199

The instrument used for psychological characteristics in this study is the Athlete Psychological Characteristics Scale 2019 (SKPA-19) which is developed by the researcher with a factor loading value > 0.5 , so that each item is valid in measuring its dimensions, and it is known that the conbrach's alpha value for each dimension is 0.7, so it can be said that each question item is reliable according to its dimensions. The following are the steps in developing the instrument: 1) the instrument is developed based on theoretical references regarding psychological characteristics, 2) the validity and reliability test of the instrument, 3) the instrument test will be preceded by asking for expert judgment in the field of sports psychology as many as three experts, from the assessment of the three experts, the following results are obtained: (a) dimensional boundaries must be clarified to avoid misinterpretation. For example, sports intelligence is part of a psychological skill not a psychological characteristic; (b) the choice of words or diction in sentences needs to be improved, so that there is no ambiguity in understanding; and (c) it is recommended to conduct field trials to ensure that this instrument can be used to explore the psychological characteristics of athletes; 4) revision based on expert opinion; and 5) a trial to see the validity and reliability, the trial was given to a pre-study sample of 98 athletes, consisting of 15 (14.9%) badminton athletes, 19 (18.9%) wrestling athletes, 16 (15.8%) judo athletes, 26 (26.7%) athletic athletes, 16 (15.8%) karate athletes, 6 (5.9%) archery athletes, and consisted of 55.2% male athletes and 42.8% female athletes all of which came from SMAN Sports and clubs in a number of cities, namely, Malang, Surabaya, and Jombang. Pre-sampling validity test is conducted on 98 respondents with factor analysis using the SPSS program. An item is declared valid if the loading factor resulting from factor analysis > 0.5 . The following are the KMO-MSA and Bartlett's Test scores, factor analysis of the Psychological Characteristics questionnaire as a whole.

Table 2. Results of Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0,280
	Approx. Chi-Square	4938,783
Bartlett's Test of Sphericity	df	3240
	Sig.	0,000

Based on the adaptation of the Systematic Literature Review with PRISMA, there are 81 questions on the Psychological Characteristics questionnaire that form eight dimensions. Factor analysis on the 81 items of the Psychological Characteristics questionnaire as a whole resulted in a significance value of $0.000 < 0.05$ Bartlett's Test of sphericity ($\alpha = 5\%$), but the KMO-MSA value of $0.280 < 0.5$ did not meet the requirements for factor analysis. Factor analysis on the 81 items of the Psychological Characteristics questionnaire as a whole resulted in the loading factor value. There are 28 questions that have a loading factor value of < 0.5 so that they are declared invalid in forming the Psychological Characteristics questionnaire and are reduced. The KMO-MSA and Bartlett's Test scores after 28 invalid questions are reduced as follows:

Table 3. Questionnaire of Overall Psychological Characteristics After Reduction

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0,582
	Approx. Chi-Square	2839,884
Bartlett's Test of Sphericity	df	1378
	Sig.	0,000

After the reduction, the significance value of Bartlett's Test of sphericity is $0.000 < 0.05$ ($\alpha = 5\%$) with a KMO-MSA value of $0.582 > 0.5$ so that the requirements for factor analysis have been met. The results of

factor analysis on each dimension of Psychological Characteristics resulted in all KMO-MSA values > 0.5 with a significance value of Bartlett's Test of sphericity < 0.05 . It is also known that the items in each dimension form exactly one factor with the ability to explain 43.756% to 71.075%. Each item in each dimension has a loading factor value > 0.5 so that each test item is declared valid in measuring its dimensions; and valid and reliable items used in data collection. This instrument is used to determine eight psychological characteristics, namely achievement motivation, resilience, hard work, self-confidence, emotional control, concentration, persistence, and openness. The instrument is first tested with the aim of selecting items and seeing the extent to which the instrument could reveal the variables to be measured in collecting data in the actual research. Then the researcher made a psychological aspect criteria as a reference using the Likert scale which is shown in table 4 below.

Table 4. Criteria for Scores on Psychological Aspect Instruments

No	Intervals	Categories
1	0 - 5	Very Less
2	6 - 10	Less
3	11 -15	Good
4	16 - 20	Very Good

The instrument is first tested with the aim of selecting items and seeing the extent to which the instrument could reveal the variables to be measured in collecting data in the actual research. Then the researcher made a criteria for psychological aspects as a reference. The data analysis technique used to determine the psychological characteristics of athletes is descriptive analysis with percentages. The data analysis technique used to determine the psychological characteristics of athletes is descriptive analysis with percentages. Meanwhile, to distinguish the psychological characteristics of athletes in terms of gender, the data are analyzed using the ANOVA (analysis of variance) test.

RESULTS AND DISCUSSION

From the results of filling out the 2019 Athlete Psychological Characteristics Scale (SKPA-19) by 199 Athletes at the East Java Regional Training Center, a good category is obtained as shown in Figure 1. This study is conducted to determine the psychological characteristics of athletes by examining 198 athletes from various sports. The psychological characteristics of the athletes studied included: achievement motivation, resilience, hard work, self-confidence, emotional control, concentration, persistence and openness. From Figure 2, it is known that the achievement motivation of athletes at the East Java Regional Training Center obtained an average value of 15.03 which indicates the good category. Then the psychological characteristics of resilience get an average value of 13.78 which is in the good category. The hard work of East Java athletes get an average score of 16.31 which is in the good category and is ranked first in the psychological characteristics of the athletes. From the results of the study, self-confidence obtained an average value of 13.90. From this study, the emotional control variable obtained an average value of 12.36 or is included in the good category. Next is the psychological characteristic of concentration, where the average value obtained is 14.19 and is in the good category. The next psychological factor is persistent with the average value obtained is 14.01. The next psychological characteristic is openness, with an average value of 12.02 in the good category. The next step is to examine the differences in the significance of the psychological characteristics of athletes in terms of gender, namely male and female.

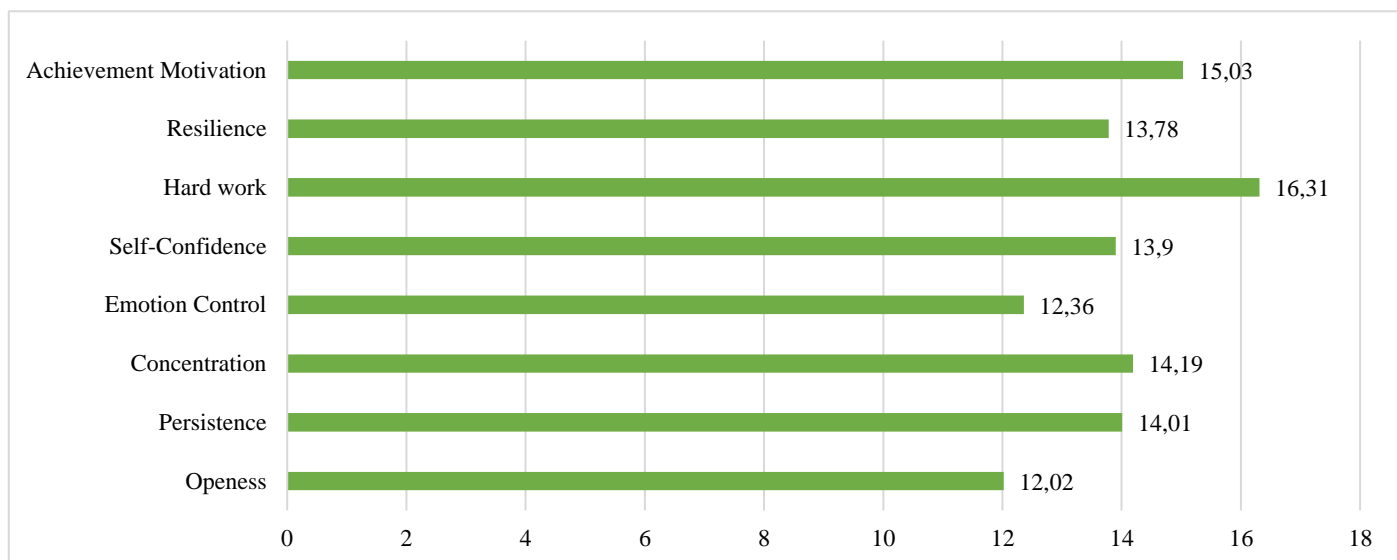


Figure 1. Psychological characteristics of athletes at the East Java Regional Training Center

To test the differences using analysis of variance (ANOVA). From the results of the data calculation, it can be seen in table 5 below.

Table 5. Results of Analysis of Variance (Anova)

Variables		df	Mean Square	Sig.
Achievement motivation	Between Groups	1	72,95	0,051
	Within Groups	197	18,938	
	Total	198		
Resilience	Between Groups	1	253,496	0,002
	Within Groups	197	26,223	
	Total	198		
Hard work	Between Groups	1	75,753	0,131
	Within Groups	197	32,956	
	Total	198		
Self-Confidence	Between Groups	1	10,644	0,039
	Within Groups	197	24,676	
	Total	198		
Emotion control	Between Groups	1	10,077	0,595
	Within Groups	197	35,607	
	Total	198		
Focus	Between Groups	1	194,197	0,039
	Within Groups	197	44,798	
	Total	198		
Persistence	Between Groups	1	92,936	0,033
	Within Groups	197	20,23	
	Total	198		
Openness	Between Groups	1	31,317	0,194
	Within Groups	197	18,465	
	Total	198		

The purpose of this study is to determine the psychological characteristics of East Java athletes who are members of the regional training center. This is very important, in addition to developing psychological characteristics into psychological skills so that athletes can use them in competitions or matches, also in order to support the coaching process carried out by coaches, in order to help athletes to perform optimally. Based on table 4, it is known that for the psychological characteristics of achievement motivation, the value of sig. $0.051 > 0.05$, meaning that there is no difference in the characteristics of achievement motivation between

male and female athletes. Furthermore, on the psychological characteristics of resilience, the sig. value is obtained. $0.002 < 0.05$, which means that there are differences in the psychological characteristics of resilience between male and female athletes. On the psychological characteristics of hard work obtained the value of sig. $0.131 > 0.05$ which indicates there is no difference in the psychological characteristics of the hard work of male and female athletes. On the psychological characteristics of self-confidence obtained the value of sig. $0.039 < 0.05$, which indicates that there are differences in the psychological characteristics of the self-confidence of male and female athletes. On the psychological characteristics of emotional control obtained the value of sig. $0.059 > 0.05$ which indicates there is no difference in the psychological characteristics of emotional control of male and female athletes. On the psychological characteristics of the focus obtained the value of sig. $0.39 < 0.05$, which means that there are differences in the psychological characteristics of male and female athletes' focus. Furthermore, persistent psychological characteristics obtained sig value. $0.033 < 0.05$ which indicates that there are differences in the persistent psychological characteristics of male and female athletes. Furthermore, the last is the psychological characteristics of openness indicated by the value of sig. $0.194 > 0.05$ which means there is no difference in the psychological characteristics of male and female athletes openness.

In research conducted by [Dongoran et al. \(2020\)](#) on Papuan PON athletes, which totaled 101 athletes and consisted of seven sports, showed that the psychological profile of Papuan PON athletes is generally in good condition. The psychological profiles include motivation, self-confidence, mental preparation, anxiety control, concentration, and the importance of a team. Meanwhile, in the research conducted by [Suturo et al. \(2020\)](#) in all athletic athletes who are members of PPLP Papua Province as many as 20 athletes, showing motivation has the highest score, then commitment and hard work, while the lowest psychological characteristics are anxiety control and concentration. For the dimensions of attention, trust, mental preparation, ambitious ambition, persistent, independent, intelligent, and self-controlled, the score is moderate.

Psychological characteristics of athletes at the East Java Regional Training Center in terms of gender differences showed no differences in achievement motivation, hard work, emotional control, and openness [Atta and Mushtaq \(2019\)](#) studied the achievement motivation of school basketball players and concluded that there was no difference in achievement motivation between male and female basketball players. Statistical findings in various sports show that there is no difference in achievement motivation between male and female athletes. Motivation is the basic force behind all one's actions involving needs, goals, and desires. Achievement motivation is one type of motivation related to efforts to achieve achievements, athletes' efforts to complete tasks, and their persistence in relation to participation in physical activities. This could be because elite athletes, both male and female, have the same goal in achieving achievement, so the efforts made by the same do not show any difference. Goal setting, also known as goal setting, allows athletes to set specific goals to achieve the best performance in their sport ([Kruger et al., 2019](#)).

Furthermore, in terms of emotional control, there was no difference between male and female athletes, this finding is in line with the results of the study ([Aldao et al., 2010](#)) shows that there is no difference in emotional control between male and female athletes, which means that men and women have the same ability to regulate emotions, ranging from love, grief to anger. Meanwhile, the results of data analysis on the psychological characteristics of resilience, self-confidence, focus, and persistence show that there are differences between male and female athletes. This is in line with the findings ([Rinaldi, 2010](#)) which states that there are differences in resilience between men and women. Men have higher scores than women. According to [Eisenberg et al. \(2003\)](#) someone who has high resilience (male) can adapt to all conditions in order to change circumstances and solve problems flexibly, while someone who has low resilience (women) has low adaptability, does not react quickly to changing circumstances and tends to be chaotic. When faced with a stress, as well as difficulty adjusting back after experiencing a traumatic experience. In addition, the level of self-confidence and control was lower for female athletes than male athletes ([Zeiger & Zeiger, 2018](#)). This study also finds the same thing with that research. It can be seen from every aspect of the psychological characteristics that have been described previously, there is a difference between the scores between male athletes and female athletes.

CONCLUSION

In this study, it is found that eight psychological characteristics possessed by East Java athletes at the Regional Training Center are categorized as good, the characteristics possessed are: achievement motivation, resilience, hard work, self-confidence, emotional control, concentration, persistence, and openness. Of the eight characteristics, the highest psychological characteristic possessed by East Java athletes is self-confidence. These eight psychological characteristics are interrelated with one another, and become a positive assessment for the East Java athletes who are the sample, and of course a special concern for coaches to further increase self-confidence in athletes so that they can achieve maximum results. Although not all athletes have participated in this study (eg, futsal, football, and basketball), this research has represented the psychological characteristics of athletes in East Java, and of course, if we as a coach can also be considered for recruiting athletes to participate in this research get maximum performance. In addition to not all athletes who are members of the East Java Regional Training Center, this study has several limitations, namely not analyzing other variables such as age and type of sport, therefore it is necessary to develop further research related to differences in psychological characteristics in terms of age and gender sport (individual or team).

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