

Contribution of Age, V02 Max, and Confidence to the Achievement of Athletes in Karo Regency in North Sumatra

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Abstract

The purpose of this study was to determine the contribution of Age, V02 Max, and Confidence to the Achievement of Tanah Karo Athletes in the Province of North Sumatra, Indonesia. Descriptive research method with correlational techniques. The sample is 18 athletes. The instruments used are documentation, tests and measurements as well as questionnaires. The data analysis technique used regression analysis. The results showed that: (1) Age contributed 82.7%, (2) V02max contributed 38.6%, (3) Self-confidence contributed 60.5% and (4) Age, Vo2 Max and Self-confidence overall together contributed 84.2% to the achievement. Conclusion Age, Vo2 Max and Self Confidence make a positive contribution to the achievements of Tanah Karo athletes, North Sumatra Province, Indonesia.

Keywords

age; Vo2 max; confidence and achievement



I. Introduction

1.1 Land of Karo

One of the places that has a highland in North Sumatra is Tanah Karo Regency. Karo Regency is located in the highlands with an altitude between 600 to 1,400 meters above sea level. Because it is located at this altitude, Tanah Karo has a cool climate with temperatures ranging from 15.6°C to 23.0°C with an average humidity of 89.12%. Karo Regency has a tropical climate and has two seasons, namely the rainy season and the dry season. Tanah Karo is a place that has a highland. Highlands (also called plateaus) are plains located at an altitude of above 1500 m above sea level. The highlands were formed as a result of erosion and sedimentation. Highlands can also occur by the former wide caldera, which is buried by material from the surrounding mountain slopes. (http://id.wikipedia.org/wiki/Dataran_tinggi). Highland Climate This climate is found in the highlands with the following characteristics: a. large daily and annual temperature amplitudes; b. dry air, c. very low humidity (air humidity); d. rarely rains. (<http://inikampusku.blogspot.com/2012/05/iklim-dataran-tinggi.html>). Karo Regency is one of the regencies in the province of North Sumatra, Indonesia. the district capital is located in Kabanjahe. Astronomically, Karo Regency is located between 2°50'–3°19' North Latitude and 97°55'–98°38' East Longitude. This district has an area of 2,127.25 km² and a population of 350,960 people based on the results of the 2010 census. In mid-2014, according to projections, the population is estimated at 382,622 who inhabit an area of 2,127.25 Km². The population density is estimated at 180 people/km². This district is located in the Karo highlands which is part of the Bukit Barisan area of North Sumatra and most of its area is in the highlands. Two active volcanoes are located in this area, namely Mount Sibayak which is still active and is located above an altitude of 2. 172 meters above sea level and Mount Sinabung. The characteristics of the Tanah Karo people in general are:

(1) intelligent in thinking and acting, (2) strong willed and trying hard to achieve their goals, (3) courageous in acting, (4) loud in speech, (5) Not afraid to start something new, (6) not ashamed to appear in the middle, (7) diplomatic spirit, (8) patient spirit, (9) good at speaking, (10) clever in speaking to entertain people and (11) has the spirit of wanting to perform, and has a high level of self-confidence which makes a major contribution to sports achievements in the Karo land of North Sumatra province. Based on the data above, Tanah Karo athletes have good achievements at the North Sumatra level, as the forerunner of achievement at the national level. The geographical condition of the land in the highlands automatically supports athletes from Tanah Karo to have good physical and physiological conditions, and is also supported by healthy food, fresh fruits so that the athletes of the land have excellent physical conditions. This is supported by data from Tanah Karo athletes whose achievements are very prominent in North Sumatra and in Indonesia.

1.2 Age

Age which is a demographic bonus area. The demographic bonus in the form of productive age, namely the age range of 15-64 years, will greatly determine the success of an area in terms of human resource development. Ideally, the public can know what the demographic bonus is, namely by understanding their position in the life of the nation and state, as well as policy makers by realizing the importance of issuing policies that can support the potentials of the productive age population optimal and maximum. The hope is the emergence of awareness of the strategic role of the productive age population, especially young people as the 'motor' of the nation. Basically there are requirements to be able to take advantage of the demographic bonus opportunity, namely, the realization of a quality population with the availability of good education, then the availability of good health services, having a work ethic, and policies that support productive age so that they are efficient. Education and skills are the main keys in gaining social status in community life (Lubis *et al*, 2019). Bompa (2018) the age of peak achievement in sports is between 18-28 years. With regard to age that achievement will be in harmony with the athlete's fitness. It can be seen that At the age of growth, a person's physical fitness is usually much better, this is because the function of the body's organs will grow optimally. Meanwhile, in the elderly, the decline in physical fitness is due to the number of tissues in the body that are damaged (Muslichatun, 2005). The level of physical fitness will increase until it reaches a maximum at the age of 25-30 years, then there will be a decrease in the functional capacity of the whole body, approximately 0.8-1% per year. According to Siti Soraya (2014) Age has a major influence on physical fitness, namely: (a) Heart and blood vessel endurance At the age of children, heart and blood vessel resistance increases until the age of about 20 years and will reach a maximum at the age of 20. -30 years, so it decreases with age. So that at the age of 70 years only have the endurance of the heart and blood vessels of about 50%. (b) Muscle strength At the age of 25 years, muscle strength reaches optimal, and after that muscle strength will decrease, until at the age of 65 the strength is only about 65-70% of the strength possessed at the age of 25 years, at the age of 65 the decline will be faster. In addition, the entire value of the physical fitness component will also decrease after about 30 years of age.

1.3 VO2Max

VO2 Max or maximum oxygen volume is the ability of the human body (lungs) to be able to breathe as much oxygen as possible. The more the body's ability to breathe oxygen, the better the body's metabolism. For this reason, the size of the VO2 max owned by

someone will help someone in their daily activities. Benny (2012) states that one of the supporting factors that are very important in achieving achievements, such as: speed, strength, agility, and endurance. To have a high aerobic endurance ability, a high Vo2 Max level is also required. According to Wilmore and Costill (2005) that: Vo2 Max is an important factor that determines maximum performance, but that does not mean that it has to limit the combination of other factors. In addition to supporting aerobic metabolic processes, Vo2 Max is also needed for the recovery process. Someone who has a high Vo2 Max is not only able to do endurance activities well but more than that, they will be able to recover (original recovery) their physical condition faster than people who have a low V02 Max. According to Sukadiyanto (2011), the increase in Vo2 Max becomes higher starting at the age of 10 years, although some argue that resistance training is not affected by aerobic ability before the age of 11 years. In general, aerobic ability declines slowly after age 25. In many studies that high altitude areas can help develop a person's Vo2 Max, so a lot of physical activity or exercise for an athlete is carried out in highland areas.

1.4 Confidence

Self-confidence as one of the dominant factors from the psychological aspect will determine the success of athletes. According to Robin's Vealey(1986) that self-confidence has indicators (1) Physical skills and training (exercise and physical skills) the athlete's belief that he has the physical skills needed to achieve achievement, (2) cognitive efficiency (cognitive efficiency) the belief that he is able to focus, maintain concentration, and make decisions to achieve achievement. (3) Resilience (tenacity) The athlete's belief that he is able to refocus himself from the mistakes he has made, is able to immediately get up after a bad performance, is able to overcome doubts and declines to achieve achievements. These three indicators will shape the athlete's ability to perform in the field. Self-confidence arises because it is supported by physical and mental readiness. The more physically and mentally prepared, the stronger the confidence will be. Understanding Self-confidence Deshpande and Zaltman understand self-confidence as a person's willingness to depend on others who are involved in these inner demands with the demands imposed on him by the world in which he lives (Semiun, 2006). According to Schneiders, self-adjustment is a process that involves mental responses and individual actions in an effort to meet needs, and overcome tensions, frustrations and conflicts successfully and in accordance with their needs with the norms or demands of the environment in which they live (Yusuf, 211). Deshpande and Zaltman understand self-confidence as a person's willingness to depend on another party involved in an exchange because he has confidence in the other party, and trust will exist if one party has confidence in another party involved in an exchange that has reliability. and integrity (in Widowati, 2016). According to Robbins & Judge (2011) self-confidence is a positive expectation or expectation that others will not act opportunistically, both in words, actions and policies. According to Lauster in Syam & Amri (2017) self-confidence is an attitude or belief in one's own abilities, so that in their actions they are not too anxious, feel free to do things according to their wishes and take responsibility for their actions, be polite in interacting with others, have an achievement drive and be able to recognize their own strengths and weaknesses. a. Confidence in self-ability Self-confidence shows a condition in which the individual believes that he is able to do as expected, can do and satisfy something without the help or support of others, is independent and dares to face the risks of what has been done. b. Optimistic The individual concerned always thinks positively about what will happen and is not easily discouraged, optimistic people tend to think that the failure of something is temporal and only happens in certain cases. c. Accepting what it is Self-acceptance is an

attitude that reflects a sense of pleasure in connection with the reality of oneself. d. Having a good self-concept or picture The way a person evaluates himself in terms of internal indifference and patterns of external indifference. Internally it contains aspects of environmental assessment of individuals. Vice versa. The results of research conducted by Doris (2017) concluded that athletes from Tanah Karo in regional championship events had a high level of self-confidence as evidenced by ranking 1 to 3 in the championship. Thus, the contribution, age, Vo2Max and Confidence Level to the achievements of athletes in Tanah Karo, North Sumatra province will be investigated. Is there a Vo2 Max contribution to the achievements of athletes in Tanah Karo Regency, North Sumatra Province, (3) Is there a contribution of Confidence to the achievements of athletes from Tanah Karo Regency, North Sumatra Province, and (4) Is there a contribution of age, Vo2max, Confidence on the achievements of the athletes of Tanah Karo district, North Sumatra Province.

II. Research Method

This study uses a descriptive method with correlational techniques, a sample of 18 athletes from Tanah Karo who took part in the XIX PON 2016 in West Java, with purposive sampling technique, the research instrument used in this research is documentation of athlete achievement, tests and measurements and interviews, while the data analysis technique used regression and correlation.

III. Results and Discussion

3.1 Results

The results show that (1) the age variable has a regression equation = $4.518 + 0.910X$, the coefficient of determination is 0.827 so it can be interpreted that after contributing to the achievement of Tanah Karo athletes, North Sumatra Province by 82.7%, (2) Variable Vo2 Max has a regression equation = $18.924 + 0.622X$, the coefficient of determination is 0.386 so it can be interpreted that Vo2 max contributes to the achievement of Tanah Karo athletes, North Sumatra Province by 38.6%, Self-confidence has a regression equation = $11,121 + 0.778X$, coefficient of determination is 0.605 so it can be interpreted that self-confidence contributes to the achievement of Tanah Karo athletes, North Sumatra Province by 60.5% and together Age, Vo2max and self-confidence have a regression equation = $1.008 + 0.780 + 0.147 + 0,052$, the coefficient of determination is 0.842, so it can be interpreted that age, Vo2max and self-confidence to the achievements of Tanah Karo athletes in North Sumatra Province contributed 84.2%.

3.2 Discussion

a. Age

Age which is a demographic bonus owned by the people of Tanah Karo who are aged 15-64, the average age of athletes who excel from Tanah Karo is around 15-30 years. The tendency of Tanah Karo athletes to excel in individual sports and self-defense. The data that can be collected shows that age is positively correlated with athlete achievement. The average age of Tanah Karo athletes who excel in PON 2106 is 15-30 years old. Based on Data on the results of the 2016 PON XIX in West Java that North Sumatra won 16 gold medals, 17 silver medals and 33 bronze medals, from this data athletes from Tanah Karo contributed 3 gold medals, (18.75%), 1 silver medal (5.88%) and 3 bronze medals (9.09%). Thus the age of Tanah Karo athletes determines success in achieving achievements for

North Sumatra. Based on the results of data analysis through regression obtained a contribution of 82.7%. Thus, age is one of the indicators that determine the success of outstanding athletes in Tanah Karo, North Sumatra Province.

b. Vo2 Max

Based on the results of data analysis on the contribution of Vo2max (Maximum Oxygen Volume) to the achievement of athletes from Tanah Karo, a contribution of 36.8% was obtained. This shows that Vo2max plays a positive role in the body to be able to strive optimally in obtaining achievements, especially cardiovascular endurance. Athletes from Tanah Karo, North Sumatra province who have good Vo2max, this is supported by the geographical location of Tanah Karo which is high above sea level, which is 600-1400 meters above sea level. Geographical location is very helpful in increasing the ability of the lungs to be able to maximally inhale as much air as possible. Because the higher the geographical location of an area, the air conditions will be getting thinner. so it takes hard work of the lungs to be able to breathe oxygen optimally which will be processed in the body into energy used for training and competition, especially the element of endurance physical condition. Thus, it can be concluded that Vo2 Max contributes to the achievements of Tanah Karo athletes in North Sumatra Province.

c. Confidence

The psychological condition of self-confidence of Tanah Karo athletes, North Sumatra Province, made a positive contribution in obtaining achievements as measured by medals at the XIX National Sports Week 2016 in Batavia, based on data analysis on the contribution of self-confidence using regression analysis techniques, the contribution was obtained. by 60.5%. The value of the presentation shows that the self-confidence of Tanah Karo athletes in North Sumatra Province is high. High level of self-confidence make a major contribution to the sports achievements of athletes in Tanah Karo, North Sumatra Province. Based on the data above, Tanah Karo athletes have good achievements at the North Sumatra level, as the forerunner of achievement at the national level.

d. Age, Vo2 Max and Confidence

The three variables of this study, namely age, Vo2 Max and self-confidence based on data analysis using regression analysis obtained a contribution of 84.2%. This shows that the factors of age, Vo2 Max and self-confidence of Tanah Karo athletes have a major contribution to success as athletes. Young age can not be denied that it is a golden age, even in Law no. 20 concerning Youth, that what is called youth is a human having an age range of 16-30 years. Athletes from Tanah Karo are on average at that age, so it cannot be denied that age for an athlete really determines a person to achieve optimally, especially in the field of sports that really need physical strength in its implementation. Young people who are at the stage of growth and development have a linear relationship between age and body physiology in which there is Vo2 Max so that age development greatly affects the development of Vo2 Max as well. Then the aspect of psychological conditions, namely the confidence of Tanah Karo athletes, on average, have high self-confidence, this is strongly supported by their previous experience and rest. The average Tanah Karo athlete in North Sumatra has good achievements, both national and international achievements. This condition triggers the spirit to achieve even higher so that with a young age, high Vo2 Max and high self-confidence, the achievements of Tanah Karo athletes can be even higher.

IV. Conclusion

The results of data analysis using regression analysis of the three independent variables and one dependent variable, namely, the variable Age, Vo2 Max and Self-confidence and the dependent variable is athlete achievement. As follows: (1) There is a contribution of age to the achievements of athletes in Tanah Karo Regency, North Sumatra Province, (2) There is a Vo2 Max contribution to the achievements of athletes in Tanah Karo Regency, North Sumatra Province, (3) There is a contribution of Confidence to athletes' achievements. - athletes from Tanah Karo district, North Sumatra province, and (4) there is a contribution of age, Vo2max, self-confidence to the achievements of athletes in Tanah Karo district, North Sumatra province, these three variables contributed 84.2% to the achievements of athletes in Tanah Karo . However, in order to maximize the athlete's achievement, there are still other variables of 15.8% that affect the performance of Tanah Karo athletes. These factors include (1) Age factor, the age of the Tanah Karo athlete who is now at the golden age in this study is an average of 28 years and leading to a decline in achievement, (2) physical condition factors (strength and endurance), while (3) psychological factors (motivation, mental strength and never give up). Because the achievements of Tanah Karo athletes from individual and martial arts branches such as athletics, wrestling and wushu sanda which are strongly influenced by the variables of Age, Vo2max and Self-confidence can be improved again.

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