

Analysis Anthropometric, Aerobic Capacity, Anaerobic and Physical Activity of Lampung Provincial Gymnastics Athletes



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ABSTRACT: This study aims to determine the anthropometric profile, aerobic, anaerobic capacity and physical activity of the Lampung Province Gymnastics Athletes. The method used is (Mix Method) descriptive quantitative & qualitative with a sample of 10 athletes. The instruments used are tests and measurements of body mass index, bleep test, running-based anaerobic sprint test (RAST), and global physical activity questionnaire (GPAQ). The data analysis technique used descriptive statistics, and regression test. The results of this study indicate that the anthropometric profile measured by Body Mass Index (BMI) is in the normal category (80%), aerobic capacity is in the good category (40%), anaerobic capacity is in the very good category (50%), and activity level Physical fitness is included in the moderate category (60%). The results of the regression test showed that: 1) There was a relationship between BMI and aerobic capacity, the sig value was obtained. $0.043 < 0.05$. 2) There is no relationship between BMI and anaerobic capacity, the sig value is obtained. $0.516 > 0.05$. 3) There is a relationship between BMI and the level of physical activity obtained by sig. $0.000 < 0.05$. 4) There is no relationship between aerobic capacity and anaerobic capacity with a sig value of $0.280 > 0.05$. 5) There is a relationship between aerobic capacity and the level of physical activity, obtained a sig value of $0.034 < 0.05$. 6) There is no correlation between anaerobic capacity and physical activity level, the sig value is $0.938 > 0.05$. So in this study, anthropometric variables measured by BMI had a significant relationship with aerobic capacity and physical activity, and there was a significant relationship between aerobic capacity and physical activity levels in the Lampung Province's gymnastics athletes.

KEYWORDS: Physical Activity, Anthropometry, Anaerobic, Aerobic Capacity

I. INTRODUCTION

Sport is an activity that cannot be separated from the life of modern society, even sports become a lifestyle, especially in urban communities still doing more activities such as playing badminton, gym, jogging and cycling besides that there are also other social and hiburam activities, such as participating in recitation, community service work in the environment and not forgetting recreation with family on holidays (leisure). A person must always do physical activity in his life (Suharjana, 2013). Sports are actually carried out in a planned manner so that they can produce good physical condition (Arif & Kusnanik, 2017). with a physical condition that can be said to be good, especially supported by a supportive posture, of course, it can produce excellent sports quality, especially if it leads to the achievement itself (Toselli, 2021). Furthermore, posture itself can greatly affect the achievements of athletes, especially those who rely on posture (Jurjiu & Pantea, 2018).

Gymnastics is a sport with systematic physical exercise movements, and assembled as a whole with the aim of forming and developing personality harmoniously. Gymnastics has an organization, namely (PERSANI) is a forum for coaching sportsmen (athletes) who have the potential to achieve achievements both at national and international levels. This is the most important point in the function of every activity, one of which is the organization of the Indonesian Gymnastics Association (PERSANI) Pengprov Lampung which has a structure and has been running for approximately 40 years. In addition, it still controls from the Indonesian National Sports Committee (KONI) and from the Youth and Sports Service (DISPORA). Based on the situation in the Persani Provincial Government organization, there are results of the achievements of Lampung gymnastics athletes, namely the record of achievements achieved by Lampung gymnastics coaching has contributed significantly to the progress of Lampung Province, this can be proven by obtaining medals from every championship that is followed both at the national and international levels. The record of achievements that have been achieved by athletes in Persani Lampung from the last 20 years of the year

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(1991-2019). It can be described that the Persani Lampung Athletes have won national level medals as many as 12 people selected disciplines, namely Artistic, Rhythmic, Aerobics with details of the number of gold medals, Silver and bronze from all gymnastics disciplines to date still exist and remain consistent in fragrant Lampung Province. It can be described that the Sons and Daughters of Persani Lampung have won National and International medals of 12 Gymnasts consisting of Artistic, Rhythmic, Aerobics disciplines with details of the amount of gold, silver and bronze from gymnastics disciplines until now still exist and consistently make the name of Lampung Province proud.

Achievement is supported by the training process with an intensity adjusted by the coach to the athlete, thus gymnastics difloat needs to do exercises to measure aerobic and anaerobic capacity and physical activity. An achievement will experience its peak if in training there is habituation starting from the program, form of training, system and form of training (Saputra & Hariadi, 2018). There is a definition of aerobic capacity, which is the ability to maintain endurance based on the duration of long exercise, while anaerobic capacity is the ability to perform very high exercise activities in repetitive events. It is important to train aerobic ability as individuals with high initial endurance are more resistant to fatigue and will have faster recovery. Anthropometry comes from the words anthropos and metros. Anthropos means body and metros means size. So anthropometry is the size of the body. This understanding is very general. Anthropometry (body size) is one way to directly assess nutritional status, especially the state of energy and protein of a person's body (Utomo et al., 2012). Thus, anthropometry, aerobic capacity is often termed VO2 Max measured using the Bleep aerobic ability test instrument (VO2 max) It is important to train aerobic ability as individuals with high initial endurance are more resistant to fatigue and will have faster recovery. Anthropometry comes from the words anthropos and metros. Anthropos means body and metros means size. So anthropometry is the size of the body. This understanding is very general. Anthropometry (body size) is one way to directly assess nutritional status, especially the state of energy and protein of a person's body (Utomo et al., 2012). Thus, anthropometry, aerobic capacity is often termed VO2 Max measured using the Bleep aerobic ability test instrument (VO2 max) Test, as one of the test instruments that can describe the degree of aerobic capacity of a float gymnastics athlete. (Supariasa, 2001) that measurements of anthropometric characteristics can be done such as weight, height, age and (BMI) Body Mass Index. The training process of an athlete is not only measured aerobic capacity because there is anaerobic capacity to determine the ability of float gymnastics athletes, one of the measuring instruments is the Running-based Anaerobic Sprint Test (RAST) is a form of test that is represented in two main components that appear, namely power and speed. Anaerobic capacity that measured anaerobic endurance data aimed to determine anaerobic endurance through rapid activity such as sprints without the use of oxygen.

Based on the type of exercise described above, of course, it is related to physical activity in everyday life in float gymnastics athletes, physical activity is aimed. (WHO, 2012) physical activity can be defined as body movements produced by skeletal muscles and require energy. Various physical activities such as running, walking, working, playing, lifting weights and various other physical exercises. So until now it is not known the level of physical activity of float gymnastics athletes using the Global Physical Activity Questionnaire (GPAQ) is an instrument to measure physical activity developed by WHO. GPAQ was developed for the purpose of monitoring physical activity in developing countries. GPAQ consists of 16 questions that collect data from participation in physical activity in three domains, namely physical activity while working, travel activities from place to place, and activities that are recreational or leisure.

METHOD

Research method is a technique or way to search, obtain, conclude or record data, both in the form of primary data and secondary data used for the purposes of compiling a scientific work and then analyzing factors related to the subject matter so that there will be a truth to the data obtained. According to (Sugiyono, 2014) the research method is: "The research method is a scientific way to obtain data with specific purposes and uses". In this study the author used survey research method.

The type of research conducted is descriptive quantitative. Descriptive Quantitative is a type of research used to analyze data by describing or describing data that has been collected as it is. In this study, the authors used quantitative research methods. According to Sugiyono (Sugiyono, 2014). This type of quantitative research can be interpreted as a research method based on the philosophy of positivism, used to examine certain populations or samples, sampling techniques are generally carried out randomly, data collection using research instruments, data analysis is quantitative / statistical, with the aim of testing what has been determined. This research was conducted in Bandar Lampung, especially on Lampung Provincial Gymnastics Athletes in Idola (PENGPROV PERSANI) and in several places related to this research problem. The time of the research took place from March to May.

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RESULT AND DISCUSSION

Gymnastics for Lampung province is a leading sport, namely the 2nd seed of the first leading sport is weightlifting in Lampung Province, gymnastics in the gymnastics category (Rhythmic, Aerobic, Artistic). This is according to the information conveyed by coach Rhythmic (Yuli yanti) in the glory year of gymnastics from 1990 Every year always gives a gold medal in Lampung Province to the Asean School championship, in SEA Games also gave medals to Lampung Province. And the most successful era was in PON XVI in 2004 which was held in South Sumatra Province. That was the year when gymnastics athletes at rhythmic were able to obtain many giving 4 gold medals and Sepriyadi in the artistic field 1 gold and at that time the points between weightlifting and gymnastics were most prominent at PON XVI.

It can be described that the Sons and Daughters of Persani Lampung have won National and International medals of 12 Gymnasts consisting of Artistic, Rhythmic, Aerobics disciplines with details of the amount of gold, silver and bronze from gymnastics disciplines until now still exist and consistently make the name of Lampung Province proud. Achievement is supported by the training process with an intensity adjusted by the coach to the athlete, thus gymnastics difloat needs to do exercises to measure aerobic and anaerobic capacity and physical activity.

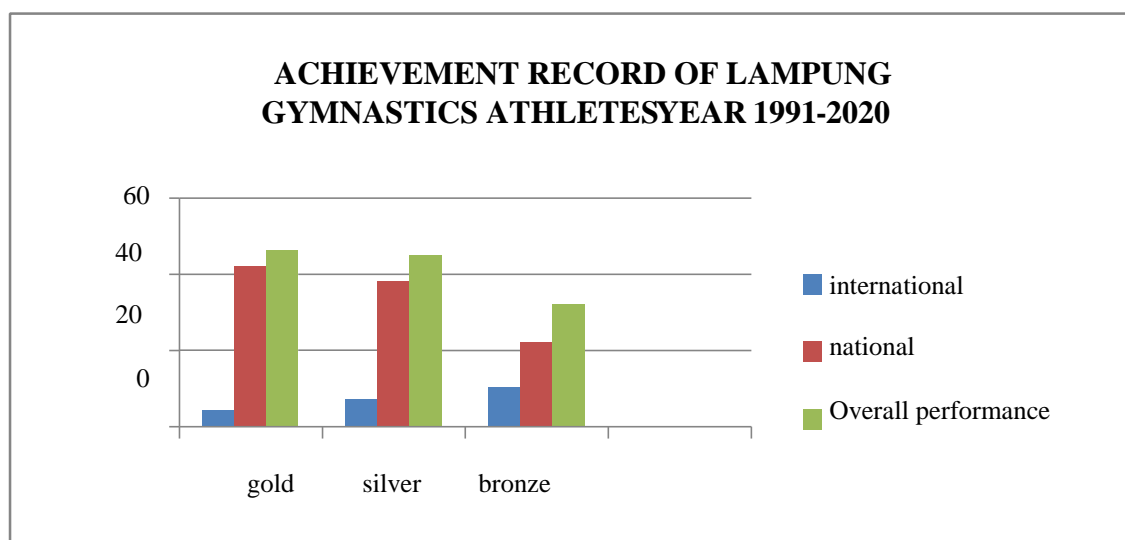


Table 1. Percentage of Limpugn Gymnast Achievement Me dal Record

Gymnast from Lampung Province Yolanda based on defending at the 2018 Asian Games. Yolanda became one of the Lampung gymnastics athletes representing Indonesia. In 2013 he also won 2 silver medals from the kejurmas in Surabaya, then won 2 silver medals at Popnas, and 2 other silver medals from inter-club competitions in Surabaya. In 2014, again he won 3 gold medals at the PPLP event in Surabaya. Not only that, this gymnastics athlete also presented gold, silver and gold medals. bronze every year. Both in 2015, 2016, 2017, and finally in 2018 won 2 bronze medals from the Asean School Games in Kuala Lumpur. (Lampungpro) And in the international event, rhythmic gymnastics from Lampung Province won a bronze medal in the international championship Heliopolis International Tournament in Cairo, the 2nd Egypt, which was held for 2 days. Rhythmic gymnastics from Lampung Province who succeeded in making the country proud at the world level.

Tri Wahyuni, who played in the Rhythmic Individual Junior/Senior number on the ribbon, was able to rank third out of 8 participating countries. (Lampungpro) The Lampung Aerobics Gymnastic 2nd gymnastics exercise, Umi Sri Haryani and Denda Firmansyah were declared qualified to represent Indonesia at the 2021 South East Asia (SEA) Games, after winning 1st place in the national selection. (RRI Bandar Lampung). Gymnast athlete from Lampung Province Meiyusi Ade Putra Senior Artistic Gymnast Lampung is still mighty.

Because Pre-PON Gymnastics has an organization, namely (PERSANI) is a forum for coaching sportsmen (athletes) Lampung gymnastics who have the potential to achieve achievements both at national and international levels, it can be concluded that gymnastics comes from information, places or sources, achieving records of achievement that are of interest, and even winning in international events can become a leading and prestigious sport in Lampung Province.

The description of the object of data research is a description of data that used in a study. In testing the description of this data the researcher try to find out the picture or condition of the respondent who becomes samples in this study.

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Gender

Based on the sex of the research subjects are grouped into two, Namely men and women with an overview of the distribution of subjects, it is seen that the number of male subjects is 2 people (20%) and female subjects are 8 people (80%).

Age

Based on the age of the study subjects, researchers obtained samples with The age range is from 13 years to 34 years and categorized can be seen that the number of subjects with the range The age of 13-19 years is 5 people (50%), the age range of 20-27 years is 3 people (30%) and the age range of 28-34 years is as many as 2 people (20%).as many as 2 people (20%).

Height

Based on the height of the study subjects, researchers get samples with a height range from 1.51 meters to 1.70 meters and It is categorized and seen that the number of subjects with a height range of 1.51 - 1.55 meters is 3 people (30%), height range Body1.56 - 1.60 meters is as many as 3 people (30%), height range Body1.61 - 1.65 meters is as many as 3 people (30%) and height range Body1.66 - 1.70 meters is as much as 1 person (10%).

Weight

Based on the body weight of the study subjects, researchers obtained samples with a weight range from 41 kg to 60 kg and categorized as views that the number of subjects with a body weight range of 40 – 45 kg is as many as 3 people (30%), weight range 46 – 50 kg is as much as 1 person (10%), body weight range 51 – 55 kg is as many as 3 people (30%) and The weight range of 56 – 60 kg is as many as 3 people (30%). **Body Mass Index Anthropometry**

Body Mass Index shows that the average Athlete's Body Mass Index is 20.17 kg/m², standard deviation is 1.94 kg/m², lowest BMI is 17.26 kg/m² and the highest BMI is 22.66 kg/m². **Aerobic apacity**

Based on the results of research and measurement of aerobic capacity of Gymnastics Athletes Lampung Province uses MultiStage Fitness Test or BleepTest shows that the average vo₂max of Athletes is 34.09 ml/kg/min, standard deviation is 6.48 ml/kg/min, lowest VO₂max is 26.40 ml/kg/min and The highest VO₂max is 47.10 ml/kg/min.

Anaerobic apacity

Based on the results of research and measurement of anaerobic capacity of athletes Lampung Provincial Gymnastics shows that the average anaerobic capacity is 4.71, standard deviation is 1.11, lowest anaerobic capacity value (best) is 2.50 and highest (worst) anaerobic capacity value is 5.91.

Physical Activity

Based on the results of research and physical activity measurements of Gymnastics Athletes Lampung Province shows that the average physical activity is 2544MET minutes/week, standard deviation is 892.28MET minutes/week, the lowest physical activity value was 1440MET minutes/week and the lowest physical activity value was 1440MET minutes/week and the highest physical activity was 3600MET minutes/week.

Data collection of anthropometric profiles, aerobic capacity, anaerobic and physical activity. The respondents of this study were Provincial Gymnastics Athletes Lampung with 10 people. In gymnastics athletes there are 10, namely Aerobics, 3 gymnastics athletes 1 male and 2 female, Rhythmic 6 gymnastics athletes female and artistic 1 male gymnastics athlete. Here are the results of the data analysis frequency distribution of respondents based on anthropometric profile, capacity aerobic, anaerobic as well as physical activity

Anthropometry Body Mass IndexLampung Provincial Gymnastics Athletes

An overview of the frequency distribution and percentage of the criteria for the Body Mass Index of Lampung Provincial Gymnastics Athletes totaling 10 people based on the results of research after being grouped and classified by interval class, A total of 2 female gymnastics athletes in Lampung Province (20%) have body categories that are in the thin category, 2 male gymnastics athletes have body categories that are in the normal category (20%), 6 female gymnastics athletes have body categories that are in the normal category (60%), and no athletes are in the pre-obesity, class 1 obesity, class 2 obesity and class 3 obesity categories.

Aerobics Capacity Lampung Provincial Gymnastics Athletes

An overview of the frequency distribution and percentage of aerobic capacity criteria for Lampung Provincial Gymnastics Athletes totaling 10 people based on the results of the study after being grouped and classified by interval class, as many as 1 male gymnastics athlete in Lampung Province (10%) has an aerobic capacity category that is in the very good category, 1 male gymnastics athlete has an aerobic capacity category that is in a good category (10%), 3 female gymnastics athletes have an aerobic capacity category that is in a good category (30%), 3 female athletes have an aerobic capacity category that is in the medium

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category (30%), 2 female athletes had aerobic capacity categories that were in the low category (20%) and none of the athletes were in the very high and very low categories.

Anaerobic Capacity of Lampung Provincial Gymnastics Athletes

An overview of the frequency distribution and percentage of anaerobic capacity criteria of Lampung Provincial Gymnastics Athletes totaling 10 people based on the results of the study after being grouped and classified by interval class as many as 1 male gymnastics athlete in Lampung Province (10%) has an anaerobic capacity category which is in the very good category, 4 female gymnastics athletes in Lampung Province (40%) have an anaerobic capacity category which is in a very good category, 1 male gymnastics athlete has an anaerobic capacity category which is in a good category (10%), 3 female gymnastics athletes have an anaerobic capacity category which is in a good category (30%), 1 female gymnastics athlete has an anaerobic capacity category that is in the moderate category (10%), and no athlete is in the less and very less category.

Statistical Analysis of Research Data

The Pearson Product Moment correlation is denoted r , provided that the value is r Not more than the price $(-1 < r < +1)$. If $r = 1$ means a negative correlation perfect, $r = 0$ means no correlation, and $r = 1$ means the correlation perfect positive (strong). Correlations marked positive indicate direction positive correlation. Correlations marked negatively indicate the direction of correlation the negative. While 0.000 indicates no correlation between variable. While the strength of the relationship will be consulted with the table interpretation. The results of the correlation analysis between anthropometric profile variables, Aerobic, anaerobic capacity as well as physical activity, are as follows:

Table 2. Summary of Anthropometric Data Analysis (BMI), Aerobic Capacity, Anaerobic and Physical Activity

Result	Variable					
	X ₁ -X ₂	X ₁ -X ₃	X ₁ -X ₄	X ₂ -X ₃	X ₂ -X ₄	X ₃ -X ₄
Correlation	0,625	0,234	0,905	0,379	0,670	-0,029
Sig. (2-tailed)	0,043	0,516	0,000	0,280	0,034	0,938
Criterion Correlation	Strong	Low	very Strong	Low	Strong	very Strong
Direction Correlation	Positive	Positive	Positive	Positive	Positive	Negative
Coefficient Determination (R ²)	0,391	0,055	0,819	0,144	0,449	0,001
Equation Regression	$\hat{Y} = 18,685 + 0,626X$	$\hat{Y} = 38,356 + 0,233X$	$\hat{Y} = 4,761 + 0,905X$	$\hat{Y} = 31,115 + 0,378X$	$\hat{Y} = 16,562 + 0,669X$	$\hat{Y} = 51,418 - 0,029X$
Conclusion	Significant	insignificant	Significant	insignificant	Significant	insignificant

Analysis of Anthropometric Profile (BMI) Data with Aerobic Ability

In the correlation table, a correlation coefficient price of 0.625 is obtained with significance 0.043. Based on the data above, testing can be done hypothesis by comparing the level of significance (p-value) as next: In this case it can be seen that the correlation coefficient is 0.625 with a significance of 0.043. Because of the significance of <0.05 , H_0 is rejected, meaning H_a is accepted, which means that if there is a relationship, the relationship is significant between anthropometric profile (BMI) and aerobic ability.

Furthermore, if the correlation coefficient of the results of the Pearson Product Moment correlation analysis is not = 0, then it can be said that a relationship occurs. The Pearson Product Moment correlation result returns 0.625 which means there is a correlation.

Positive between anthropometric profile (BMI) and aerobic ability. After the results are obtained that there is a significant positive relationship between anthropometric profile (BMI) and aerobic ability, the next step is to interpret the strength of the relationship between anthropometric profile (BMI) and aerobic ability. After interpretation with the table of the level of correlation coefficient relationship owned by Sugiono obtained The result is that the strength of the relationship between anthropometric profile (BMI) and aerobic ability is strong. Based on the results of the correlation coefficient, it can also be

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understood that the correlation is positive, meaning that the better the anthropometric profile (BMI), the better the aerobic ability with strong relationship strength.

While explaining the percentage of the influence of anthropometric profiles (BMI) on aerobic ability called the coefficient of determination which is the result of squaring R, a coefficient of determination (R²) of 0.391 was obtained, which contains the understanding that the influence / contribution of anthropometric profiles (BMI) on aerobic ability is By 39.1%, while the rest is influenced by other variables. The form of influence of anthropometric profile (BMI) (X1) on aerobic ability (X2) can be described by regression equation as can be seen in appendix 10 of the Coefficient table obtained namely $\hat{Y} = 18.685 + 0.626X$

Analysis of Anthropometric Profile (BMI) Data with Anaerobic Ability

In the correlation table, the price of the correlation coefficient is 0.234 with a significance of 0.516. Based on the data above, hypothesis testing can be carried out by comparing the level of significance (p-value) as follows: In this case it can be seen that the correlation coefficient is 0.234 with a significance of 0.516. Because of the significance of >0.05, Ho is accepted, meaning Ha is rejected, which means that if there is a relationship, the relationship is not significant between anthropometric profile (BMI) and anaerobic ability. Furthermore, if the correlation coefficient of the results of the Pearson Product Moment correlation analysis is not = 0, then it can be said that a relationship occurs. The correlation result of Pearson Product Moment produces 0.234 which means there is a correlation positive between anthropometric profile (BMI) and anaerobic ability.

After the results are obtained that there is a positive relationship between anthropometric profile (BMI) and anaerobic ability, the next step is to interpret the strength of the relationship between anthropometric profile (BMI) and anaerobic ability. After interpretation with Sugiono's correlation coefficient relationship level table, it was found that the strength of the relationship between anthropometric profiles (BMI) and anaerobic ability was low. Based on the results of the correlation coefficient, it can also be understood that the correlation is positive, meaning that the better the anthropometric profile (BMI), the better the anaerobic ability with low relationship strength.

While explaining the percentage of influence of anthropometric profiles (BMI) on anaerobic ability called the coefficient of determination which is the result of squaring R, a coefficient of determination (R²) of 0.055 was obtained, which contains the understanding that the influence / contribution of anthropometric profiles (BMI) to anaerobic ability is 5.5%, while the rest is influenced by other variables. The form of influence of anthropometric profile (BMI) (X1) on anaerobic ability (X3) can be illustrated by regression equations as can be seen in appendix 11 of the Coefficients table obtained, namely: $\hat{Y} = 38.356+0.233X$

Analysis of Anthropometric Profile (BMI) Data with Physical Activity Level

In the correlation table, the correlation coefficient price is 0.905 with a significance of 0.000. Based on the data above, hypothesis testing can be carried out by comparing the level of significance (p-value) as follows: In this case it can be seen that the correlation coefficient is 0.905 with a significance of 0.000. Because of the significance of <0.05, Ho is rejected, meaning Ha is accepted, which means that if there is a relationship, the relationship is significant between anthropometric profile (BMI) and physical activity level. Furthermore, if the correlation coefficient of the results of the Pearson Product Moment correlation analysis is not = 0, then it can be said that a relationship occurs. The correlation result of Pearson Product Moment produces 0.905 which means there is a correlation positive between anthropometric profile (BMI) and physical activity level. After the results are obtained that there is a significant positive relationship between anthropometric profile (BMI) and physical activity level, the next step is to interpret the strength of the relationship between anthropometric profile (BMI) and physical activity level. After interpreting with Sugiono's correlation coefficient relationship level table, it was found that the strength of the relationship between anthropometric profile (BMI) and physical activity level was very strong. Based on the results of the correlation coefficient it can also be understood that the correlation is positive, This means that the better the anthropometric profile (BMI), the better the level of physical activity with a very strong relationship. While explaining the percentage of the influence of anthropometric profiles (BMI) on physical activity levels called the coefficient of determination which is the result of squaring R, a coefficient of determination (R²) of 0.819 was obtained, which contains the understanding that the influence / contribution of anthropometric profiles (BMI) on physical activity levels is 81.9%, while the rest is influenced by other variables. The form of influence of anthropometric profile (BMI) (X1) on the level of physical activity (X4) can be illustrated by regression equations as can be seen in appendix 12 of the Coefficient table obtained, namely: $\hat{Y} = 4.761+0.905X$

Analysis of Aerobic Ability with Anaerobic Ability

In the correlation table, the correlation coefficient price is 0.379 with a significance of 0.280. Based on the data above, hypothesis testing can be carried out by comparing the level of significance (p-value) as follows: In this case it can be seen that the correlation coefficient is 0.379 with a significance of 0.280. Because of the significance of >0.05, Ho is accepted, meaning Ha is rejected, which means that if there is a relationship then the relationship is not significant between aerobic ability and anaerobic ability.

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Furthermore, if the correlation coefficient of the results of the Pearson Product Moment correlation analysis is not = 0, then it can be said that a relationship occurs. The correlation result of Pearson Product Moment produces 0.379 which means there is a correlation positive between aerobic ability and anaerobic ability.

After the results have been obtained that there is a positive relationship between aerobic ability and anaerobic ability, the next step is to interpret the strength of the relationship between aerobic ability and anaerobic ability. After interpretation with Sugiono's correlation coefficient relationship level table, it was found that the strength of the relationship between aerobic ability and anaerobic ability was low.

Based on the results of the correlation coefficient, it can also be understood that the correlation is positive, meaning that the better the aerobic ability, the better the anaerobic ability with low relationship strength.

While explaining the percentage of the influence of aerobic ability on anaerobic ability called the coefficient of determination which is the result of squaring R, a coefficient of determination (R²) of 0.144 was obtained, which contains the understanding that the influence / contribution of aerobic ability to anaerobic ability is 14.4%, while the rest is influenced by other variables. The form of influence of aerobic ability (X₂) on anaerobic ability (X₃) can be illustrated by regression equations as can be seen in appendix 13 of the Coefficients table obtained, namely: $\hat{Y} = 31.115 + 0.378X$

Analysis of Aerobic Ability Data with Physical Activity Levels

In the correlation table, the correlation coefficient price is 0.670 with a significance of 0.034. Based on the data above, hypothesis testing can be carried out by comparing the level of significance (p-value) as follows: In this case it can be seen that the correlation coefficient is 0.670 with a significance of 0.034. Because of the significance of <0.05, H₀ is rejected, meaning H_a accepted, which means that if there is a relationship then the relationship is significant between aerobic ability and physical activity level. Furthermore, if the correlation coefficient of the results of the Pearson Product Moment correlation analysis is not = 0, then it can be said that a relationship occurs. The Pearson Product Moment correlation result is 0.670, which means that there is a positive correlation between aerobic ability and physical activity levels. Once it has been found that there is a significant positive relationship between aerobic ability and physical activity levels, the next step is to interpret the strength of the relationship between abilities aerobics with the level of physical activity. After interpreting with Sugiono's correlation coefficient relationship level table, it was found that the strength of the relationship between aerobic ability and physical activity level was strong. Based on the results of the correlation coefficient, it can also be understood that the correlation is positive, meaning that the more aerobic ability, the better the level of physical activity with strong relationship strength.

While explained the percentage of the influence of aerobic ability on the level of physical activity called the coefficient of determination which is the result of squaring R, a coefficient of determination (R²) of 0.449 was obtained, which contains the understanding that the influence / contribution of aerobic ability to the level of physical activity is 44.9%, while the rest is influenced by other variables. The form of influence of aerobic ability (X₂) on the level of physical activity (X₄) can be illustrated by the regression equation as can be seen in appendix 14 of the Coefficient table obtained, namely: $\hat{Y} = 16.562 + 0.669X$

Analysis of Anaerobic Ability with Physical Activity Level

In the correlation table, a correlation coefficient price of -0.029 with a significance of 0.938 is obtained. Based on the data above, hypothesis testing can be carried out by comparing the level of significance (p-value) as follows: In this case it can be seen that the correlation coefficient is -0.029 with a significance of 0.938. Because of the significance of >0.05, H₀ is accepted, meaning H_a is rejected, which means that if there is a relationship then the relationship is not significant between anaerobic ability and physical activity level. Furthermore, if the correlation coefficient of the results of the Pearson Product Moment correlation analysis is not = 0, then it can be said that a relationship occurs. The Pearson Product Moment correlation result is 0.029, which means that there is a negative correlation between anaerobic ability and physical activity levels.

While explained the percentage of the influence of anaerobic ability on the level of physical activity called the coefficient of determination which is the result of squaring R, the coefficient of determination (R²) is obtained 0.001, which means that the influence / contribution of anaerobic ability to the level of physical activity is 0.01%, while the rest is influenced by other variables. The form of influence of anaerobic ability (X₃) on the level of physical activity (X₄) can be described by the regression equation as can be seen in appendix 15 of the Coefficient table obtained, namely: $\hat{Y} = 51.418 - 0.029X$

DISCUSSION

Based on the description of the general description data above, it shows that Lampung Province has a record of achievements that have been achieved by athletes in Persani Lampung from the last 20 years from the last year (1991-2019). It can be described that the Sons and Daughters of Persani Lampung have won 12 National level medals consisting of Artistic, Rhythmic, Aerobics

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disciplines with details of the number of gold, silver and bronze medals from all gymnastics disciplines to date still exist and remain consistent in making Lampung Province proud. The achievements of the Lampung athletes show that gymnastics has contributed greatly to determining the position of Lampung province in its participation in Pekan National Sports (PON), and subsequently has made a training and coaching center in Lampung Province. Therefore, the branch of gymnastics is quite superior, interesting and phenomenal. Interesting because this branch has made many achievements both regionally and internationally. Furthermore, phenomenal, because this branch almost every time participates in events and gets awards and champions. That is, the achievements achieved are always consistent, but the popularity is very less when compared to other sports, especially game sports.

Based on the results of gender shows that the research respondents are grouped into two, namely men and women with a picture of the distribution of images, it can be seen that the number of male respondents is 2 people and female respondents are 8 people. This shows that some or the majority of respondents are women, it can be seen that the interest of gymnasts is mostly women, in addition to the numbers determined for women such as Rhythmic gymnasts, this is in accordance with the opinion of the coach. Based on the age results, it shows that the research respondents get sampel with an age range of 13 years to 34 years and categorized and described it can be seen that the number of subjects with an age range of 13-19 years is 5 people, the age range of 20-27 years is as many as 3 people and the age range of 28-34 years is as many as 2 people. This shows that some or the majority of respondents are junior or young age determined in gymnast numbers according to the talents taken and interests, training to get potential athletes and golden age. This is in the opinion of the coach.

Based on height, it shows that the research respondents get samples with height from 1.51 meters to 1.70 meters and are categorized and described, it can be seen that subjects with a height range of 1.51-1.55 meters are as many as 3 people, the height range of 1.56-1.60 meters is as many as 3 people, the height range of 1.66-1.70 meters is 1 person. This shows that some or the majority of respondents are a minimum height range of 1.51 to 1.60 meters to be categorized as gymnasts in Rhythmic and Aerobics numbers who are shouted for artistic gymnastics selection Severance height ranges from 1.66 to 1.70 to be categorized as gymnasts. Body height is the distance from the floor to the vertex when a person's body position is standing upright (Rudiyanto. et al., 2012). Height itself can be said to be the cumulative length of the three parts of the body, namely the neck and head, leg length and body length (Etty, 2014). In addition, what is meant by the leg itself is the lower limb, including the hips and legs (Lisdiantoro & Pambudi, 2022).

This is according to the opinion of the trainer based on body weight, showing that the research respondents obtained samples with body weights from 41 kg to 60 kg and categorized and described, it can be seen that the number of subjects, the weight range of 40-45 kg is as many as 3 people, the weight range of 46-50 kg is as many as 1 person, the weight range of 51-55 kg is as many as 3 people, and the weight range of 56-60 kg is as many as 3 people. It shows that some or the majority of respondents are in the weight range of 45-55 kg can be categorized as gymnasts in the Rhythmic numbers that are chanted, while for the selection of Aerobics and Artistic gymnasts in the weight range of 56-60 kg. With athletes that have excess body weight, they can inhibit the movement carried out so that the results can be less effective and cannot be with fast movements as desired (Santika & Subekti, 2020).

Based on the results of the study in Figure 19, the results of the study after being grouped and classified from the graph can be concluded that as many as 2 gymnastics athletes have a body category that is in the thin category while 2 male athletes have a body category that is in the normal category and 6 female gymnastics athletes have a body category that is in the normal category This can show that there are no gymnast athletes who are in the pre-obese category, Grade 1 obesity, grade 2 obesity, grade 3 obesity. Based on the results of the study in Figure 20, the results of the study after being grouped and classified from the graph, it can be concluded that as many as 1 male gymnastics athlete has an aerobic capacity category that is in the very good category and 1 male gymnastics athlete has an aerobic capacity category which is in the good category while 3 female gymnastics athletes have an aerobic capacity category which is in the good category for 2 female gymnastics athletes have an aerobic capacity category is in the low category and no athletes are in the very high and very low categories. This shows that in gymnastics sports good endurance is needed to be able to support performance, the aerobic capacity of athletes seen from the strong endurance of someone who trains and regulates the athlete's Vo2Max according to the opinion of the coach.

Based on the results of the study after being grouped and classified from the graph, it can be concluded that as many as 1 male gymnastics athlete has an anaerobic capacity category which is in the very good category, 4 female gymnastics athletes have an anaerobic capacity category which is in the very good category, 1 male gymnastics athlete has an anaerobic capacity category which is in the good category, 3 female gymnastics athletes have an anaerobic capacity category anaerobic capacity is in the category moderate, and no athlete is in the less and very less categories. This shows that the anaerobic capacity of athletes can be seen by

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tests that use the Running Based Anaerobic Sprint Test (RAST) in the main speed and agility and fatigue of athletes, this is according to the opinion of the coach.

Based on the results of the study after being grouped and classified from the graph, it can be concluded that as many as 2 male gymnastics athletes have physical activity in the high category, as many as 2 female gymnastics athletes have a physical activity category that is in the high category, and 6 female gymnastics athletes have a physical activity category that is in the medium category, and no athletes are in the low physical activity category. Doing training activities is done mostly every day with the duration of training doing physical activity activities 3 to 4 hours, athletes are also required to be able to perfect every movement during the match. Therefore, an athlete must have excellent physique to be able to perform at its best.

In this study the instrument taken to measure anthropometric profile is the measurement of Body Mass Index, the instrument used to measure aerobic capacity is the Multi-Stage Fitness Test or Bleep Test, an instrument used to measure the anaerobic capacity of researchers using the Running-based Anaerobic Sprint Test (RAST). Anthropometry is a measurement involving the whole body to determine the proportions and ratios in a person's body (Maulina, 2018). Global Physical Activity Questionnaire (GPAQ) is an instrument to measure physical activity developed by WHO. (T. Jeff Chandler, 2019) physical activity values from the Global Physical Activity Questionnaire (GPAQ) have a level of validity being correlated with data from the accelerometer ($r = 0.48$). GPAQ consists of several questions that collect from participants in physical activity in three domains, namely, as well as physical activity that is recreational or leisure, physical activity measurement using (GPAQ) which consists of 16 questions involving physical activity while working, traveling from place to place and athlete training activities, physical activity that is recreational or leisure.

CONCLUSION

Research conducted on Lampung Provincial Gymnastics athletes by measuring anthropometric profiles, aerobic capacity, anaerobic and physical activity can be concluded that the body mass index in Lampung gymnastics athletes shows that they are generally included in the normal category with a percentage of 80%. In this case also Body mass index has a relationship with aerobic ability, has strong correlation criteria, positive and significant correlation direction, then body mass index has a relationship with physical activity level, has very strong correlation criteria, positive and significant correlation direction and body mass index has a relationship with physical activity level and has very strong correlation criteria, The direction of the correlation is positive and significant. Then the aerobic capacity of Lampung gymnastics athletes is included in the good category, with test data results Vo2max percentage 40%. Aerobic capacity has a relationship with anaerobic ability, has low correlation criteria, positive and insignificant correlation directions, aerobic capacity also has a relationship with physical activity levels, has strong correlation criteria, positive and significant correlation directions. And the anaerobic capacity of Lampung gymnastics athletes is included in the very good category, the results of the RAST data test with a percentage of 50%. Anaerobic capacity has a relationship with the level of physical activity, has very low correlation criteria, negative and insignificant correlation directions. As well as the physical activity of Lampung gymnastics athletes is included in the medium category, with a percentage of 60%. Aerobic capacity also has a relationship with physical activity levels, has strong correlation criteria, positive and significant correlation directions.

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