

The Profile of Physical Conditions Sumatera Barat's Volleyball Athletes

Muhamad Sazeli Rifki^{1*} and Ariando Ariston²

^{1,2}Faculty of Sports Sciences, Universitas Negeri Padang, Padang, Indonesia

*Corresponding author. Email: msr_rifki@fik.unp.ac.id

ABSTRACT

Volleyball is an interesting sport, because in it there is an impression of cheap, easy and has its own charm. Technically, volleyball tends to be complex, because there are various movements that are combined simultaneously from the upper body, upper or lower body motion. The thing is a volleyball athlete has good physical condition so he can survive each set. This research belongs to descriptive research. This study is to see the results of a review of the physical condition of West Sumatra pra pon volleyball athletes in 2018. The population in this study was 27 male volleyball athletes and 27 female volleyball athletes, so the total population was 54 people. The sampling technique is total sampling, that is the total population. Based on the results of research related to the description of the physical condition level of male and female volleyball athletes PRA PON West Sumatra in 2018 which includes: speed, sit-ups, push-ups, leg muscle power and endurance, it can be concluded that: Overall average the average physical condition level of men's volleyball athletes PRA PON West Sumatra 2018 is in the adequate classification and the average level of physical condition of the female volleyball athletes PRA PON West Sumatra 2018 is in the sufficient classification.

Keywords: Physical Conditions and Volleyball Athletes

1. INTRODUCTION

In the world of sports development today, sports coaching is a very important factor in advancing it, because the development of the world of sports depends on the development of sport itself, both coaching in the community, education and coaching at the local, national and international levels, all of which are requires a better mechanism for fostering sports to achieve achievement. Sports is an activity that includes a match or race that aims to achieve achievement. Sportsmanship and fair play are demands in the competition between athletes and teams. All athletes in each sport will try to show their best to win the gold medal or champion as a benchmark of success.

Volleyball is one of the very interesting sports, because in it there is an impression of cheap, easy and has its own charm. Technically, volleyball tends to be complex, because there are various movements that are combined simultaneously from the upper, middle or lower body movement.

Basically, volleyball is a fun game and is usually used as a recreation in saturated time after doing activities. The development of volleyball is very fast along with the development of sports so that volleyball is not only for recreation and to fill leisure time but

develops as a profession and demands high achievements.

The development of volleyball, especially in West Sumatra when viewed in terms of enthusiasts, has experienced a lot of progress that has spread to all corners of the country, where many matches or championships between regions, so that many founding and active volleyball sports clubs both in the city and the region. But when viewed in terms of the achievements that have been achieved have not been able to show encouraging results. This is evident from several national championships that have been held, where our athletes often fail to achieve achievements, in terms of supporting factors to become better have been tried as much as possible such as the availability of good coaches, procurement of quality facilities and equipment, competitions are often held, the formation of good organizations and the atmosphere of encouragement from the community and government.

The clubs under the auspices of the West Sumatra PBVSI Program, such as: PSVC, TRY FAMILY, Padang Adios, UNP, IVAND, Black Sweet, RESI, Semen Padang, and many other clubs scattered in the West Sumatra. The clubs are clubs that already have a name on the volleyball stage in West Sumatra.

The writer's observations did at the UNP club that the UNP club is a club that has aged 13 years, but the

achievements obtained in the last 2 years are very encouraging at the level of West Sumatra and Sumatra and have often followed the National level championship, but at the National level has not been encouraging and only entered 8 major and have not yet contributed to the West Sumatra volleyball team to qualify for the 2012 PON in Riau.

A volleyball club will excel if the management of the organization is well managed, the condition of athletes is good and diligent in training, and has a quality coach. This is in accordance with the statement of Harsuki that the factors that influence achievement are: a) factors related to the organization of the match, b) factors related to the athlete's condition and c) factors related to the coach.

According to Sajoto states the determinants of athlete's prime achievement in sports can be classified into four (4) aspects namely; (1) Biological aspects which include (a) the potential or basic abilities of the body consisting of strength, speed, agility, coordination, energy, muscular endurance, working power of the heart-lung, flexibility, balance, accuracy, and health in sports, (b) Function of body organs, (c) Posture and body structure, (d) Nutrition. (2) Psychological aspects include: intellectual, motivation, personality, work coordination of muscles and nerves. (3) Environmental aspects include: social, facilities and infrastructure, weather, family. (4) Supporting aspects include: trainers, training programs, awards, funds, orderly sports organizations.

Based on the background above, the writer is interested in conducting research on how the actual situation of the West Sumatra UNP volleyball club which includes: physical conditions, skills (techniques), anthropometrics, training programs, infrastructure, sources of funds, management and achievement management and psychological factors, which affect the achievements of a sports club.

2. METHODS

This research belongs to descriptive research. The purpose of this study is to see the results of a review of the physical condition of PRA PON volleyball athletes in West Sumatra in 2018. The population in this study were 27 male volleyball athletes and 27 female volleyball athletes, so the total population was 54 people. The sampling technique is total sampling, that is the total population.

3. RESULT

Descriptive Data

Descriptive analysis was carried out based on data obtained in the field, namely the physical condition of the West Sumatra PRA PON volleyball athletes in 2018,

consisting of male and female athletes. The purpose of describing the data in this study is to describe the level of physical condition possessed by male and female volleyball athletes PRA PON West Sumatra in 2018. Obtaining physical condition data is done through tests consisting of, speed, Sit-Up, Push-Up, explosive power leg muscles, and endurance. For more details about the level of physical condition of male and female volleyball athletes PRA PON West Sumatra in 2018 will be described as follows:

1. Men's Volleyball Athlete

a. Speed

Frequency distribution of speed test results from 27 male volleyball athletes at the PRA PON West Sumatra Year 2018, obtained interval classes above 5.24 with an excellent classification of 1 person (3.70%), interval classes 4.86-5 , 24 with a good classification of 6 people (22.22%), class intervals 4.49-4.85 with enough classifications of 12 people (44.44%), class intervals 4.11-4.48 with less classifications 8 people (29.63%), and interval classes under 4.11 with a very poor classification of 0 people (0.00%).

b. Sit-ups

Sit-Up frequency distribution from 27 male volleyball athletes of PRA PON West Sumatra in 2018, obtained interval classes above 67 with very good classification of 2 people (7.41%), interval classes 57-67 with good classification of 5 people (18.52%), class intervals of 47-56 with enough classifications of 11 people (40.74%), class intervals of 37-46 with less classifications of 9 people (33.33%), and interval classes that are in below 37 with a very low classification of 0 people (0.00%).

c. Push-ups

Push-Up frequency distribution of 27 male volleyball athletes at PRA PON West Sumatra Year 2018, obtained interval classes above 61 with very good classification of 1 person (3.70%), interval classes 49-61 with good classification of 8 people (29.63%), interval classes 38-48 with enough classifications of 10 people (37.04%), interval classes 26-37 with less classifications of 6 people (22.22%), and interval classes that are in under 26 with very poor classification of 2 people (7.41%).

d. Leg Muscle Explosion Power

The distribution of limb muscle power frequency from 27 male volleyball athletes of PRA PON West Sumatra in 2018, obtained interval classes above 165.80 with excellent classification of 1 person (3.70%), interval classes 155.43-165 , 80 with a good classification of 5 people (18.52%), interval classes 145.06-155.42 with enough classifications of 13 people (48.15%), interval classes 134.68-145.05 with

less classifications 5 people (18.52%), and interval classes under 134.68 with a very poor classification of 3 people (11.11%).

e. Durability

The distribution of endurance frequency of 27 male volleyball athletes from PRA PON West Sumatra in 2018 obtained interval classes above 47.1 with an excellent classification of 3 people (11.11%), interval classes 42.3-47.1 with good classification as many as 4 people (14.81%), class intervals 37.5-42.2 with enough classification as many as 11 people (40.74%), class intervals 32.6-37.4 with less classifications of 9 people (33.33%), and the class interval below 32.6 with a very less classification of 0 people (0.00%).

2. Women's Volleyball Athletes

a. Speed

Speed frequency distribution of 27 female volleyball athletes PRA PON West Sumatra Year 2018, obtained interval classes above 6.29 with excellent classification of 3 people (11.11%), interval classes 5.83-6.29 with good classification of 3 people (11.11%), class interval 5.37-5.82 with enough classification of 11 people (40.74%), class interval 4.91-5.36 with less classification of 10 people (37.04%), and interval classes under 4.91 with a very poor classification of 0 people (0.00%).

b. Sit-ups

Sit-Up frequency distribution from 27 female volleyball athletes PRA PON West Sumatra Year 2018, obtained interval classes above 29 with very good classification of 2 people (7.41%), interval classes 23-29 with good classification of 3 people (11.11%), interval classes 17-22 with enough classifications of 15 people (55.56%), class intervals of 10-16 with less classifications of 6 people (22.22%), and interval classes that are in under 10 with very little classification of 1 person (3.70%).

c. Push-ups

Push-Up frequency distribution of 27 female volleyball athletes PRA PON West Sumatra Year 2018, obtained interval classes above 56 with very good classification of 2 people (7.41%), interval classes 51-56 with good classification of 4 people (14.81%), 46.50 interval classes with enough classifications of 14 people (51.85%), interval classes 41-45 with less classifications of 7 people (25.93%), and interval classes that are in under 41 with very little classification of 0 people (30.00%).

d. Leg Muscle Explosion Power

The distribution of limb muscle power frequency from 27 female volleyball athletes PRA PON West Sumatra Year 2018, obtained interval classes above 124.83 with excellent classification of 2 people (7.41%), interval classes 115.87-124, 83 with good

classification of 7 people (25.93%), interval classes 106.91-115.86 with enough classifications of 9 people (33.33%), interval classes 97.96-106.90 with less classifications 8 people (29.63%), and class intervals under 97.96 with a classification of very little as 1 person (3.70%).

e. Durability

Distribution of endurance frequency of 27 female volleyball athletes PRA PON West Sumatra Year 2018, obtained interval classes above 38.0 with an excellent classification of 2 people (7.41%), interval classes 34.3-38.0 with good classification of 6 people (22.22%), interval classes 30.6-34.2 with enough classifications of 10 people (37.04%), class intervals of 26.8-30.5 with less classifications of 7 people (25.93%), and the interval classes that are under 26.8 with a classification of less than 2 people (7.41%).

4. DISCUSSION

Based on the analysis and processed data regarding "physical condition profile of male and female volleyball athletes PRA PON West Sumatra in 2018, so in this chapter will answer the research question which is how to describe the physical condition level of male and female volleyball athletes PRA PON West Sumatra in 2018 regarding the speed, sit-ups, push-ups, leg muscle power and endurance. For more details, it is necessary to put forward the discussion as follows:

1. Speed

Based on the results of the analysis that has been illustrated that the average level of speed possessed by male volleyball athletes PRA PON West Sumatra in 2018 obtained an average of = 4.68 or categorized as sufficient. The category is still not maximal, because to obtain a very good category must be at a value above = 5.24. Furthermore, the average level of speed possessed by female volleyball athletes PRA PON West Sumatra in 2018 obtained an average of = 5.60 or categorized as sufficient. The category is still not maximal, because to obtain a very good category must be at a value above = 6.29. The speed component is almost required of all sports, including volleyball. According to [1] said, "speed is the ability of a person to do continuous movement in the same form with the shortest possible time". According to [2] said, "speed is very dependent on strength because without power, speed cannot be developed". Furthermore, Sukadiyanto said, "speed is the ability of a person to make a motion or series of movements as fast as possible in response to stimuli".

Speed is influenced by various factors, while these factors depend on the type of speed such as, the speed of the reaction is influenced by the arrangement of nerves, the orientation of the situation and the

sharpness of the five senses. The speed of movement is determined by factors of muscle strength, explosive power, coordination power of movement, agility and balance. Sprint speed is influenced by muscle strength and joints [2]

According to Bouchard (1976) in [2] said, "the frequency of stimulation is determined by the will (Will Power), determination, nerve mobility, the speed of muscle contraction, the degree of automation of motion and the state of the quality of certain muscles, such as explosive power". According to Pate (1984) in [2] said, "speed is influenced by several factors, as follows, 1) muscle type (distribution between fast and slow muscles), 2) Neuromuscular coordination, 3) biomechanics, and 4) muscle strength". Based on some of the opinions of the experts above, it can be concluded that, speed is the ability of a person to make a move or a series of movements as quickly as possible in response to stimuli. Speed is influenced by various factors, while these factors depend on the type of speed such as, the speed of the reaction is influenced by the arrangement of nerves, the orientation of the situation and the sharpness of the five senses. Meanwhile, the speed of movement is determined by factors of muscle strength, explosive power, power of movement coordination, agility and balance. It is clear that, speed is a component of the physical conditions needed in volleyball, especially when competing. The low speed possessed by an athlete, it will result in athletes unable to develop other physical condition components, such as strength and so on. These components have an important relationship, so that it will affect other techniques in volleyball.

2. Sit-Up

Based on the results of the analysis that has been done illustrated that the average level of Sit-Ups owned by male volleyball athletes PRA PON West Sumatra in 2018 obtained an average of = 52 or categorized as sufficient. The category is still not maximal, because to obtain a very good category must be at a value above = 67. Furthermore, the average level of Sit-Ups owned by female volleyball athletes PRA PON West Sumatra 2018 obtained an average of = 20 or categorized enough. The category is still not maximal, because to obtain a very good category must be at a value above = 29.

One component of physical condition that plays an important role in sports performance is strength, because strength is a driving force, and as a deterrent to injury to sports. This is consistent with the opinion of [2] says, "every branch of sport requires strength. How much and how much strength is needed and what kind of strength is needed depends on the branch of the sport.

The strength needed in volleyball is different from the strength needed in tennis, basketball, badminton, soccer, and will be very different from the strength needed in boxing, karate, silat, kempo, fencing, running, weightlifting, etc. other. it is this difference that indicates the specification of the physical needs of a sport.

Muscle strength including the strength of the arm muscles, chest muscles, abdominal muscles, and thigh muscles. These muscles have their respective functions and roles which are very important in every sport that they are involved in, ranging from refusing, hitting, lifting, walking and so on. according to Sukadiyanto said, the strength benefits for athletes include, for 1) increasing the ability of muscles and tissues, 2) reducing and avoiding injury to athletes, 3) improving performance, 4) therapy and rehabilitation of injuries to muscles, and 5) help learn or master techniques.

Strength training can be done using weight from one's own weight (internal weight) or using external weight (external load). Outside weight can be free weights such as Dumbbells, Barbells or Gym Machines. While the form of exercise that uses the most widely used weights are such as Chin-Up, Push-Up, Sit-Up, or Back-Up.

Measurement of upper body strength using internal loads can be done with several instruments such as, Bent Knee Sit-Up, Modified Sit Up, Push-Up, Push-Up Degree, Modified Push-Up, Isometric Push-Up, Modified Pull-Up, Pull-Up, Crl-Up Test, Sit-Up Test

Based on the opinions of the experts above, it can be concluded that the strength of the abdominal muscles is one component that must be possessed by volleyball athletes. Abdominal muscle strength is a very important element in volleyball, because it can perform activities that rely on the stomach or support other movements in volleyball, such as jumps in Smash and Block. If the abdominal muscle strength is still categorized as low, it will affect the results of the jump so that the ability to do Smash or Block will not be maximized.

3. Push-Up

Based on the results of the analysis that has been done illustrated that the average level of Push-Up owned by men's volleyball athletes PRA PON West Sumatra in 2018 obtained an average of = 43 or categorized as sufficient. The category is still not maximal, because to obtain a very good category must be at a value above = 61. Furthermore, the average level of Push-Up owned by female volleyball athletes PRA PON West Sumatra 2018 obtained an

average of = 48 or categorized enough. The category is still not maximal, because to obtain a very good category must be at a value above = 56.

As in the previous explanation, that muscle strength is an important component in volleyball. Muscle strength including the strength of the arm muscles, chest muscles, abdominal muscles, and thigh muscles. These muscles have their respective functions and roles which are very important in every sport that they are involved in, ranging from refusing, hitting, lifting, walking and so on.

Strength training can be done using weight from one's own weight (internal weight) or using external weight (external load). Outside weight can be free weights such as Dumbbells, Barbells or Gym Machines. While the form of exercise that uses the most widely used weights are such as Chin-Up, Push-Up, Sit-Up, or Back-Up. One of the exercises using internal weights is Push-Up, which aims to measure the strength and endurance of the upper body.

Based on some of the opinions above, it can be concluded that the strength and endurance of the upper body is one component that must be owned by a volleyball athlete. Arm and shoulder muscle strength is a very important element in volleyball, because it can engage in motion activities that rest on the arms and shoulders that support other movements in volleyball, such as jumps in doing Smash and Block. If the abdominal muscle strength is still categorized as low, it will affect the results of the jump so that the ability to do Smash or Block will not be maximized.

4. Leg Muscle Explosion Power

Based on the results of the analysis that has been illustrated that the average level of leg muscle explosive power possessed by men's volleyball athletes PRA PON West Sumatra in 2018 obtained an average of = 150.24 or categorized as sufficient. The category is still not maximal, because to obtain a very good category must be at a value above = 165.80. Furthermore, the average level of leg muscle explosive power possessed by female volleyball athletes PRA PON West Sumatra in 2018 obtained an average of = 111.39 or considered sufficient. The category is still not maximal, because to obtain a very good category must be at a value above = 124.83.

According to [1] said, "explosive power is the ability of a person to use the maximum power deployed in the shortest possible time". According to Bafirman and Agus (2008: 82) said, "explosive power is one of the important biomotor components in sports activities". According to [2] said, "explosive power in sports practice can be interpreted as the ability to move the body, body parts or tools at high speed".

Based on some of the opinions of the experts above, it can be concluded that, the leg muscle power outline can be said to be the maximum ability of leg muscles to produce strength in a fast time. In volleyball the leg muscle explosive power is really needed for every athlete, this explosive power is done when jumping or doing Smash or Block. This movement requires muscle strength with an efficient quality of motion. Good leg muscle explosive power allows athletes to have high reach above the net and carry out attacks optimally. If you do not have a good leg muscle explosive power, then when doing an attack or Smash and do damages the opponent's attack (Block) will not be maximized and when landing even feet will not be strong to do the pedestal. Therefore, the leg muscle explosive power needs to be trained and improved through continuous training that is planned and programmed so that the leg muscle boom power of the athlete becomes better.

5. Durability

Based on the results of the analysis that has been done illustrated that the average level of endurance owned by men's volleyball athletes PRA PON West Sumatra in 2018 obtained an average of = 39.87 or categorized as sufficient. The category is still not maximal, because to obtain a very good category must be at a value above = 47.1. Furthermore, the average level of endurance that is owned by female volleyball athletes PRA PON West Sumatra in 2018 obtained an average of = 32.43 or categorized as sufficient. The category is still not maximal, because to obtain a very good category must be at a value above = 38.0.

According to [2] "endurance is one of the most important elements of physical condition because it is the foundation or basis for developing other elements of physical condition". According to Bafirman and Agus (2008: 33), "endurance is defined as a time of endurance that is the length of time someone can do an intensity of work or far from fatigue". According to Pate in [3], endurance is also divided into muscle endurance and cardiorespiratory endurance:

- a. Muscle endurance is aimed at the ability to display isotonic and isometric repetitive muscle contractions or to support significant isometric contractions of resistance. Muscle endurance is related to muscle strength.
- b. Cardiorespiratory endurance is the ability to use the whole body, activity with moderate intensity for the same period.

From the opinions of the experts above, it can be concluded that endurance is important in volleyball, because it is the basis for developing other elements of physical conditions. Therefore, endurance needs to

be trained and improved through continuous training that is planned and programmed so that athlete endurance becomes better. Athletes who have a low level of endurance, it will be difficult to develop other elements of physical condition, this will be seen when entering the final set in volleyball.

5. CONCLUSIONS AND SUGGESTIONS

A. Conclusion

Based on the results of research relating to the description of the physical condition level of male and female volleyball athletes PRA PON West Sumatra in 2018 which includes: speed, sit-ups, push-ups, leg muscle power and endurance, it can be concluded that:

1. Overall the physical condition level of men's volleyball athletes PRA PON West Sumatra in 2018 is in sufficient classification.
2. Overall level of physical condition of female volleyball athletes PRA PON West Sumatra in 2018 is in sufficient classification.

B. Suggestions

Based on the conclusions above, the writers can provide suggestions that can help overcome the problems encountered in the level of physical condition of male and female volleyball athletes PRA PON West Sumatra 2018:

1. To the male and female volleyball coaches PRA PON West Sumatra in 2018, it is advisable not to neglect the level of physical condition of the athlete, because physical condition is the basis

of every branch of sport, especially in volleyball. Improvement of physical condition components can be done by doing planned, systematic, continuous training and paying attention to the basic principles of training, as well as paying attention to external factors that are thought to affect athlete performance.

2. To the male and female volleyball athletes PRA PON West Sumatra in 2018, it is recommended to be serious and motivated in undergoing physical condition training including speed training, sit-ups, push-ups, leg muscle explosive power and endurance so that the desired achievements can be achieved maximally.

REFERENCES

- [1] Agus, A. (2012). *Olahraga Kebugaran Jasmani, sebagai suatu Pengantar*. Padang : Sukabina Press.
- [2] Syafruddin. (2011). *Ilmu Kepeleatihan Olahraga Teori dan Aplikasinya dalam Pembinaan Olahraga*. Padang : FIK UNP Padang.
- [3] Bafirman dan Agus, A. (2008). *Pembentukan Kondisi Fisik*. Padang : FIK UNP.
- [4] Sukadiyanto. (2005). *Pengantar Teori dan Metodologi Melatih Fisik*. Yogyakarta : FIK UNY.
- [5] Sudijono, A. (2015). *Pengantar Evaluasi Pendidikan*. Jakarta : PT Raja Grafindo Persada.
- [6] Widiastuti. (2011). *Tes dan Pengukuran Olahraga*. Jakarta : PT Bumi Timur Jaya.