



Papuan Volleyball Athlete's Physical Movement Literacy Performance

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Abstract

The background of this research is the unknown level of physical condition of the volleyball athletes for the Papua team. This study aims to find out how good the physical condition level of the Papua volleyball athletes will be as candidates for the Papuan team. This research is a quantitative descriptive research, the data collection technique used is using a physical test. The sample in this study were young elite volleyball athletes. The data analysis technique used is descriptive statistics in the form of percentages. Based on the data on the overall results of tests on the physical condition of volleyball athletes from 37 male respondents, there were 7 people (19.44%) in the very good classification, 9 people good (25.82%), 10 people in the sufficient category (29.10. %), the unfavorable category is 5 people (12.89%), and 5 people are included in the very unfavorable category (12.89%). This physical condition can describe the actual physical condition of volleyball athletes who will be candidates for the Papuan team. These results describe several components that can influence it, including: speed, flexibility, strength, explosive power, agility, and endurance. Therefore, if there is research related to this study, it is advisable to update the applied method of instrument application as needed in the field.

How to Cite

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INTRODUCTION

Sport is a form of physical activity that is mostly done by men and women of all ages, from children to adults (Azhar et al., 2020). One of the reasons they participate in sports is to get physically fit afterward (Rueda Flores et al., 2023). This helps them to be mentally and physically ready to do more work (Rodríguez-Romo et al., 2023), and also improve their health so that they can perform daily tasks in good condition (Shaw et al., 2023). Besides being able to improve and also maintain actual health (Bandara et al., 2023), Sports can also foster interest and talent to help education in schools and can foster good character qualities for achievement for people who make it happen (Geng et al., 2023). Volleyball is a sport that is popular in today's society (Destriana et al., 2022). Volleyball as part of a true achievement sport must be able to become a sport that fosters and develops athletes or athletes in a planned, tiered and sustainable manner. This is done through competitions to achieve achievement targets with the support of sports science and technology.

One of the most important capital to improve physical ability is basic skills (Collins et al., 2023). Furthermore, to improve these skills requires training in endurance, strength, speed, power, flexibility, and agility, all of which are the physical conditions of volleyball (Guntoro et al., 2020; Guntoro & Qomarrullah, 2020). Ball control skills are very important to improve basic skills in playing volleyball, especially physical abilities such as power and flexibility which affect agility (Gustiawan Handro, Putra M. Rusni Eka, 2016). If playing volleyball is about achieving something, you need to train hard and each player must move in a way that works well together (Andrian et al., 2020). Every volleyball team needs team training according to the physique, methods and strategies used to create good coordination and cooperation through a combination of techniques. Competition is a form of sports achievement that can overshadow the skill training above. Teamwork, cooperation and communication can all be developed through volleyball events, which are team-based activities. So far, volleyball has shown that extracurricular participants will have good physical abilities to take part in this activity. Other abilities will be able to develop properly with good physical skills. Playing volleyball at its best requires not only mastering technique and tactics, but also maintaining good physical condition through practice, which is important for volleyball players. As for some identification of the problems in this

study, namely, among others: (1) During the jump practice when the smash is not high enough, so the ball gets stuck in the net; (2) When blocking, reach for the lower hand so that the ball can freely pass through the block; (3) Smash shots are also felt to be weak by some players; (4) When receiving a strong smash, sometimes the ball does not bounce perfectly due to lack of training in the players' arm muscle strength; (5) When doing physical exercise, many players tire quickly due to the lack of endurance of the players. The formation of the Papuan volleyball team for the 2024 Pre-PON (National Sports Week) for North Sumatra and the Special Region of Aceh also has the potential to be disrupted due to the unknown physical condition of the athletes. However, if the degree of the situation is known, it will be easier for the coach to plan the actual preparation program for what is to come.

Some previous research strengthens the background of this research, namely: (1) Athletes have deficiencies in the components of physical condition, namely strength, speed, flexibility, muscle endurance, and cardiac endurance in the less category. Meanwhile, the physical condition component of power is in the good category (Chabibi Arif et al., 2021); (2) Jump height, arm muscle power, speed, flexibility, and endurance are included in the moderate category (Maté-Muñoz et al., 2022); (3) Abdominal muscle strength and agility are included in the very good category (Stefan, 2021); and (4) Components of physical condition, leg muscle explosive power and agility in the less category. Arm muscle explosive power and aerobic endurance are in the moderate category, while flexibility is in the good category, this is influenced by the level of excellent physical condition (Roca et al., 2022). The level of a person's physical development through sports aims to improve his endurance and physical condition so that he can participate in activities properly. Someone who is physically healthy will be able to support their learning activities, perform better, and participate in other physical activities. Regular physical exercise is necessary for good physical fitness. It is impossible to talk about an athlete's achievements in any sport without also talking about his physical abilities and fitness. For example, volleyball club athletes who are currently coaching athletes who have the talent and ability to compete at the next level. National. Then, volleyball has always been one of the sports that is competed in every annual sporting event championship between countries, including the Olympics at the global level, the Asian Games, and the Sea Games which are

held at the Asian level. Major sports events are also held in Indonesia itself, including PON and PORPROV (Provincial Sports Week), in which every City or Regency from the Indonesian Province participates.

The importance of evaluation that must be carried out periodically starting from the athlete selection stage to the final stage of implementing the training program and the achievements to be achieved are influenced by gradual achievement coaching. Athletes who have many talents and receive consistently good coaching can only achieve great things. Physical fitness is one of the important requirements for improving the performance of an athlete; one could even say that it is the basic standard for the prefix «exercise sport». A less important aspect that forms the basis for developing strategies, tactics and techniques is one's physical condition. Based on the explanation and explanation of the origin of the problem, where the physical condition of athletes is needed in every match or championship. This must also be adjusted to the characteristics or needs of each sport. The purpose of this study, on the other hand, is to ascertain the athletes from the Papuan men's volleyball team who will compete in Pre-PON 2023. The research conducted then provides benefits, namely it can be an illustration to find out how well the level of physical condition of volleyball athletes is.

METHOD

The population in this study were 150 participants in the selection of the Papua Volleyball Pre-PON team. Furthermore, the process of collecting data in survey research using the test and measurement method 37 male athletes from Merauke and Mappi Regencies became the sample for this study. Saturated sampling was used to select these samples (Sawir et al., 2022), if the number of people in the population sample is less than one hundred, then all of them are used as samples. Survey research methods are used in quantitative descriptive research methods (Qomarrullah et al., 2023). The implementation of the research was carried out in May 2023. Data collection is then carried out to make the work easier and the results better, in the sense that it is faster, complete and systematic so that it is easier to process. The instrument used is a physical test. The instrument is a tool that can be used in research when collecting data. The research instrument used was using tests including: a 60 meter sprint speed test, flexibility using the sit and reach test, strength with push-up and sit-up tests, explosive power with a vertical jump test, agility using

Illinois agility run test, and endurance using a bleep test. The steps to analyze the data will then be taken by the source of the data collected. The process of grouping data according to variables and types of respondents, presenting data for each variable studied, and performing calculations to answer questions and test hypotheses is known as data analysis. Physical tests were used as a method of data collection (Suratni et al., 2022), during the data collection process for this study, researchers required respondents to undergo a series of physical tests. Regarding data collection procedures, researchers first prepared research equipment before traveling to Merauke and Mappi Regencies with equipment that had been prepared for collection. Participate in respondent meetings during practice time. A number of direct physical tests were carried out by researchers on Papuan volleyball athletes. Researchers enter and process data after data acquisition. Then in this study used descriptive statistical data analysis method combined with the percentage formula to determine the percentage level of physical condition (Kurdi et al., 2020). Furthermore, percentage degrees are used to provide data decisions, namely: $80\% \leq 100\%$ (very good); $60\% \leq 80\%$ (good); $40\% \leq 60\%$ (enough); $20\% \leq 40\%$ (less); and $0\% \leq 20\%$ (very less).

RESULTS AND DISCUSSION

Based on the data obtained in the field, it can be described as follows **Figure 1**.

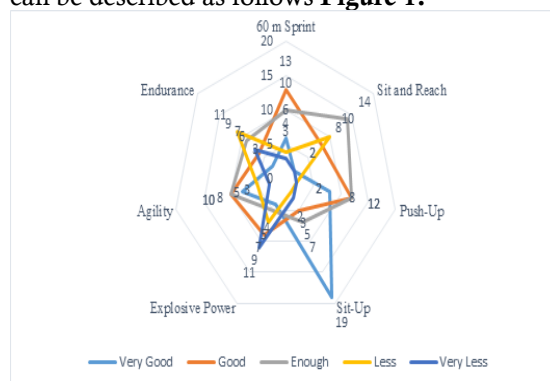


Figure 1. Distribution of Physical Performance Data for the 2023 Papuan Volleyball Selection Team

- Based on the results of the speed test for volleyball athletes from 37 male respondents, 6 people (16.14%) were included in the very good classification, 13 people were good (38.81%), 10 people were sufficient (29.10%), in the unfavorable category there were 4 people (9.68%), and 3 people were included in the very unfavorable category (6.5%). Speed is

- a person's ability to make continuous movements of the same form in the shortest possible time. In volleyball, it will be more directed to the speed of the leg muscles in working when chasing the ball.
2. Based on the results of the flexibility test for volleyball athletes from 37 male respondents, there were 2 people (3.21%) in the very good classification, 8 people (22.68%) good, 14 people (42.23%) in the sufficient category.), in the unfavorable category there were 10 people (29.0%), and 2 people were included in the very unfavorable category (3.24%). Flexibility is often interpreted as a person's ability to move the body or parts in the widest possible range of motion, without experiencing injury to the joints and muscles surrounding the joints. In volleyball, the benefits of body flexibility are very important, namely to reduce the risk of injury in sports. Some flexibility exercises that are often performed in volleyball are flexibility in the neck, shoulders, waist and dynamic flexibility.
 3. Based on the results of the strength test obtained from two test items namely push-ups and sit-ups. The results of the push-up test from 37 male respondents included 8 people (22.59%) in the very good classification, 12 people (35.51%) good, 12 people (35.51%) enough category, 12 people (35.51%) good category not good there are 2 people (3.21%), and 2 people are included in the very unfavorable category (3.2%). Push-up exercises are useful in training the muscles located in the upper body, such as the forearm, upper arm, shoulder and chest muscles. Then with push-ups, the upper body will form. This push-up exercise will be useful for training the triceps and biceps muscles and fingers, so that when hitting smashes and doing top passes it can produce good results. Furthermore, based on the results of the sit-up test for volleyball athletes from 37 male respondents, there were 19 people (58.51%) in the very good classification, 5 people good (12.89%), 7 people in the sufficient category (19, 41%), the category is not good, there are 2 people (3.21%), and 3 people are included in the very bad category (6.55%). Sit-ups provide various benefits for us, especially for volleyball athletes. The benefits of sit-ups that we already know are forming the abdominal muscles of athletes. But sit-ups are also very beneficial in volleyball. Abdominal muscle strength when hitting a smash plays a very big role, doing a springiness can affect the hardness of the smash.
 4. Based on the explosive power test of 37 male respondents, there were 4 people (9.77%) in the very good classification, 9 people (25.88%) good, 5 people (12.89%) sufficient category, in the unfavorable category there were 7 people (19.41%), and 11 people were included in the very unfavorable category (32.35%). Muscle explosive power or power is the ability of a muscle or group of muscles to do work explosively. The explosive power of this muscle is influenced by the strength and speed of muscle contraction. Athletes who are trained in muscle strength and speed will cause very good explosive power. Explosive power in volleyball usually occurs when you are going to do the pedestal for the jump of the smash movement.
 5. Based on the results of the agility test of 37 male respondents included in the very good classification there were 8 people (22.7%), good 10 people (29.23%), sufficient category there were 10 people (29.23%), poor category good there are 5 people (13.01%), and 3 people are included in the very unfavorable category (6.65%). Agility is the ability to change direction quickly without disturbing balance. Some people can move quickly but they can't change their direction of movement quickly, which cannot be said to be agile. In volleyball, an athlete must be required to have good agility, because agility will support all the movements in volleyball.
 6. Based on the results of the endurance test for volleyball athletes, it can be explained from 37 male respondents that 3 people (6.55%) were included in the very good classification, 6 people were good (16.11%), 9 people were sufficient (25.85%), the unfavorable category was 11 people (32.37%), and 7 people were included in the very unfavorable category (19.44%). This endurance training leads us to the basis of physical training for an athlete. Endurance will form the foundation for the next athlete's training. Cardiovascular endurance is a complex component because it involves the function of the heart, lungs, and the ability of blood vessels and capillaries to send oxygen to all parts of the body to form energy to maintain routine training loads.
- Based on the data on the overall results of tests on the physical condition of volleyball athletes from 37 male respondents, there were 7 people (19.44%) in the very good classification, 9 people (25.82%) good, 10 people (29.10) in the sufficient category. %), the unfavorable category is 5 people

(12.89%), and 5 people are included in the very unfavorable category (12.89%). This physical condition can describe the actual physical condition of volleyball athletes who will be candidates for the Papua Pre-PON team. These results describe several components that can influence it, including: speed, flexibility, strength, power, agility, and endurance. Several analytical studies can then be carried out, namely: First, the results of the speed tests that have been carried out show that in general the results are quite good. This speed exercise is very often done by athletes during warm-up, namely doing short sprints. Some of the components that affect this speed are muscle strength in contracting (Onyekachi-chigbu & Osuorah, 2023). Speed training can help volleyball athletes to move positions in play to attack or defend (Rueda Flores et al., 2023). In terms of attacking, speed functions as a power process in carrying out hard smashes (Affandi et al., 2020). This is influenced by several factors that are less intensive in training, so it needs to be improved so that later it will produce good quality. The benefits of speed training can make athletes more agile in moving and physical activity. Then that way, an athlete finds it easier to move from one place to another without significant complaints from the body; Second, the flexibility test results obtained at the time of the study tended to show sufficient results. This flexibility exercise is often done even though the athletes don't realize it on purpose, namely during stretching, warming up and relaxing. Disproportionate body weight will also affect the flexibility of the muscles and bones they have (Sajid et al., 2023). Flexibility or flexibility is one of the important components that must be possessed by the body of every athlete. Because it looks easy, flexibility movements are often underestimated (Hariyanti et al., 2019). In fact, when it was tested, not everyone could do it (Tur & Bibiloni, 2019). Currently, flexibility tests are even included in indicators to determine the level of physical condition of an athlete's body. Good body flexibility can make it easier for someone to carry out various daily activities and reduce the possibility of injury or pain in certain areas of the body such as the back. Inadequate flexibility in daily activities will be more difficult to do; Third, the results of research on arm muscle tests using push-ups and sit-ups. Furthermore, in the strength test, male volleyball athletes have a moderate average. Strength is the ability to work a group of muscles that contract maximally. In order to produce resistance and external resistance (Faridhatunnisa & Kurniawan Pratama, 2019). The results of muscle strength can support athlete

performance (Marquina Nieto et al., 2022). Arm muscle strength is needed by volleyball athletes who aim to combine with speed which can cause processes in explosive power, so that athletes get hard smash results that can make it difficult for the enemy to receive the ball (Daryono, 2018). In volleyball games, arm strength training is needed such as push up exercises which are used in arm muscle strength which can increase the effectiveness of smash shots and train power smashes. Considering the arm strength factor for volleyball athletes, the evaluation in the condition of arm muscle strength with good training is related to increasing the ability of arm muscle strength in male volleyball athletes; Fourth, the results of the explosive power test using the vertical jump of male volleyball athletes have an unfavorable average. Explosive power is a combination of physical condition components between speed and strength that work dynamically in a short time (Marisa et al., 2022). Explosive power can be summed up as an ability that is used in a short time. Explosive power in volleyball is very important because it is used to make movements in the leg muscles to make jumps (Yanto & Barlian, 2020). This is because explosive power determines how hard a person hits and how high he jumps (Lorenz & Morrison, 2022). The explosive power of the leg muscles is the ability of the muscles to overcome loads with a high rate of contraction. This element is the product of strength and speed abilities. This ability is needed in sports that have elements of jumping or jumping, sprinting and smashing; Fifth, the results of the agility test in this study showed good results. The athlete's ability to perform agility is classified as good, because agility in volleyball is very necessary. Athletes are not agile in playing volleyball, so the performance that the athlete will show will not be good (Brumitt & Cuddeford, 2020). The last component is explosive power, this explosive power component shows good results for men because men's scores tend to be relatively good, but athletes have poor grades. Coaches must emphasize this exercise to athletes (Kusuma & Irawan, 2022). Agility in volleyball is needed to make unexpected movements to anticipate the arrival of the ball and the fall of the ball, therefore volleyball athletes are required to have good agility (Basrizal et al., 2020). Given the importance of agility for the volleyball branch, it needs to be maximized; and Sixth, the results of the endurance test using the MFT (Multistage Fitness Test) test showed poor results due to domination with moderate and very poor results. This can be caused by a lack of cardiovascular endurance exercise performed. Because

this exercise is the most boring and very tiring, athletes rarely do this exercise (Sumarwati et al., 2022). This endurance is very important for the future, the better the endurance one has, the better the athlete's quality will be (Sidik & Rosdiana, 2022). there are several athletes who have good and very good levels of cardiovascular endurance, this is because endurance training is carried out regularly and well and the athlete's condition at the time of carrying out this test is excellent (Vitalistyawati, Luh, Putu et al., 2022). The coach must do more exercises to train the cardiovascular endurance of volleyball athletes. Endurance is a person's ability to have an energy resistance system for a long time without experiencing fatigue. Endurance in volleyball games is needed by athletes because volleyball matches last up to five sets of matches, so good endurance is needed in ongoing matches. Therefore, in the endurance factor in volleyball, it can be maximized.

CONCLUSION

Based on the results of this study, it can be concluded that based on the results of the average speed test in the sufficient category, then the results of the flexibility test also average in the sufficient category. Furthermore, the results of the strength test show that the average category is good. As for the results of the explosive power and endurance tests based on the average, they show a poor category. Therefore, if you want to qualify for Pre-PON 2023, coaches should pay attention to the correct training pattern and dosage and need to be improved so that the athlete's physical condition performance can be better and maximized. Seeing these results should be a reference for athletes, coaches and managers to increase or extend the duration of training so that they develop properly. The physical fitness of the athletes supports the athletic achievements of volleyball. An athlete's physical condition can provide insight into the performance they achieve. Volleyball is a team sport, but the physical condition of athletes also affects teamwork. The more balanced the physical condition, the better the team's performance.

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