

Physical Condition of Pekalongan City Athletes

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Abstract. The physical condition of an athlete refers to the physical abilities and general health of an athlete in the context of a particular sport or physical activity. An athlete's physical condition is influenced by various factors, including regular and measurable physical exercise, a balanced diet, adequate rest, as well as genetic and environmental factors. Several physical aspect conditions that can affect athlete performance include muscle strength, endurance, speed, and flexibility. All of these aspects must be improved in a balanced way so that an athlete can perform optimally. The physical condition of athletes in Pekalongan City was studied. The population of this study was 49 athletes, and data was obtained through tests and measurements of endurance, speed, flexibility, and arm muscle strength. The average results of the tests showed endurance test was 32.03 in the less category, the speed test was 5.44 in the less category, the flexibility test was 18.45 in the sufficient category, and the arm muscle strength test was 32.31 in. in less categories. In conclusion, the physical condition of Pekalongan city athletes is in the less category.

Keywords: Physical Condition; muscle strength; endurance; speed; flexibility.

INTRODUCTION

Sports indeed have many benefits for maintaining and improving physical fitness. Physical fitness encompasses several important aspects such as strength, endurance, and flexibility. Through sports, individuals can strengthen their muscles, improve cardiorespiratory fitness, and maintain joint flexibility. Additionally, sports serve various purposes that can vary from person to person. Some people engage in sports to maintain their health and overall fitness. They aim to sustain physical fitness and prevent lifestyle-related diseases.

Meanwhile, there are also people who participate in sports with the goal of achieving high performance. They commit to training their technical, tactical, and strategic abilities in a specific sport. They work hard and employ various approaches to reach their maximum potential in their chosen sport. Sports achievements do not occur spontaneously; they require thorough preparation and development. Through planned training, individuals can enhance the physical and technical skills needed in sports. Approaches involving training, tactical understanding, and strategy are crucial for attaining desired performance. Thus, sports are not solely physical activities but also involve complex mental and strategic aspects. Through sports, individuals can achieve optimal physical fitness and desired achievements through consistent effort and dedication.

Sports that can be performed by both men and women. In ancient times, before the existence

of modern weapons, every nation was able to defend themselves by blocking or attacking. Anything could be used, whether it was made of wood or iron, to block if under attack (Kurniawan, 2010). Sports that emphasize physical conditions. Additionally, sports require participants to have agility, endurance, strength, and flexibility.

Pekalongan City is one of the regions in Central Java that has achieved good results in sports. This is evident from the achievements in various championships in Central Java, where Pekalongan City has won several times. Moreover, in the Provincial Sports Week (PORProv) in 2023, athletes from Pekalongan City are undergoing training programs to assess their physical conditions in order to support their achievements in the upcoming PORProv championships in July.

The achievements of athletes from Pekalongan City are undoubtedly influenced by various factors, one of which is physical condition. Physical fitness is the foundation of sports performance because techniques, tactics, and mental aspects can be developed effectively with good physical quality (Hinda Zhannisa & Sugiyanto, 2015). Physical condition is a requirement that athletes must possess in order to improve and optimize their sports performance, and it should be developed and improved according to the characteristics and needs of each sport (Pujiyanto, 2015). Physical condition is a necessary requirement in improving an athlete's performance and may even be considered a fundamental need that cannot be postponed or

negotiated (Hanief, Puspodari, & Sugito, 2017). It means that physical condition is a crucial aspect in supporting an athlete's achievements, and thus, the factor of physical condition must be considered by athletes.

Based on the above description, the researcher is interested in measuring and understanding the physical condition of athletes in Pekalongan City. Similar research has been conducted by Pertiwi (2012) titled "Profile of Physical Condition of Fencing Athletes in Purworejo Regency, Central Java," with the overall conclusion of male and female athletes: Excellent 0% (0 individuals), Good 0% (0 individuals), Moderate 40% (8 individuals), Poor 55% (11 individuals), and Very Poor 5% (1 individual). As for the results of the specific physical condition test (related to skills) of fencing athletes as a whole for males and females: Excellent 0% (0 individuals), Good 5% (1 individual), Moderate 60% (12 individuals), Poor 35% (7 individuals), and Very Poor 0% (0 individuals). The research was conducted on fencing athletes in Purworejo Regency in 2012, and based on the achievement data in PORProv 2013, Purworejo Regency ranked higher than Pekalongan City in the medal tally. This means that the research was conducted using the same method, but the results would be different when considering the quality of athletes in Pekalongan City who were able to become champions in 2022. In terms of quality, some athletes from Pekalongan City in 2022 have already achieved notable achievements.

The results of this research will generate new norms for the physical condition of athletes

obtained from high-performing athletes, which can be used as a reference in the future. This issue is interesting to study because there is not much research on norm tests for the physical abilities of athletes.

METHODS

The type of research conducted is quantitative descriptive, which aims to describe a specific phenomenon. The population in this study is all athletes in Pekalongan City, with a total of 129 athletes. The sampling technique used is random sampling, where a sample size of 49 athletes is randomly selected from the population. Random sampling is a technique of selecting a subset of the population as respondents or samples (Sugiyono, 2011). The data collection in this research involves tests and measurements. The data collection methods used in this study are as follows: 1) endurance test using the MFT (Maximum Fitness Test), 2) speed test using a 30-meter sprint, 3) flexibility test using the sit and reach test, 4) abdominal strength test using sit-ups, 5) arm strength test using push-ups, and 6) lower body power test using the vertical jump. The data analysis used is an analysis to determine the test-retest reliability.

RESULTS AND DISCUSSION

Data obtained from the research will be processed and analyzed using statistical methods. The overall summary of the data will be presented as follows:

Table 1. Data Results of Arm Strength, Speed, Flexibility, and Endurance Tests of Athletes from Pekalongan City in 2023.

test items	Unit	amount	Mean	SD	the highest score	lowest value
Push Up	time	1583	32.31	10.91	58	9
Sprint 30m	second	266.63	5.44	0.82	7.31	4.28
Sit and Rest	cm	904.1	18.45	5.88	29	3
MFT	ml/kg	1569.25	32.03	7.81	50.5	20.75

Based on the data in table 1, it can be observed that for the push-up item, the highest score obtained was 58 repetitions, the lowest score was 9 repetitions, and the average score was 32.31. For the sprint 30m item, the highest score obtained was 7.31 seconds, the lowest score was 4.28 seconds, and the average score was 5.44 seconds. For the sit and rest item, the highest score obtained was 29 cm, the lowest score was 3 cm, and the average score was 18.45 cm. For the

MFT item, the highest score obtained was 50.5 ml/kg, the lowest score was 20.75 ml/kg, and the average score was 32.3 ml/kg.

The calculation of reliability was conducted to determine the consistency level of the obtained test results. The results of the reliability test conducted on the physical fitness test results of athletes from Pekalongan City in 2023 are as follows:

Table 2. Summary of Reliability Test Results (Guilford, 1956: 145)

No.	Test Variable	Reliability	Category
1	Push Up	0.14	poor
2	Sprint 30 m	0.19	poor
3	Sit and Rest	0.00	poor
4	MFT	0.58	Below Average

Based on the data in Table 2, the reliability test results are categorized as very low (for the variables Push Up, Sprint 30m, and Sit and Rest) and moderate (for MFT). Next, in processing and analyzing the data of the physical ability test results, each variable is classified according to the assessment norms for the physical ability scores of athletes from Pekalongan city in 2023, as conducted in this study.

These classifications provide an assessment of the physical ability of athletes based on the obtained test scores.

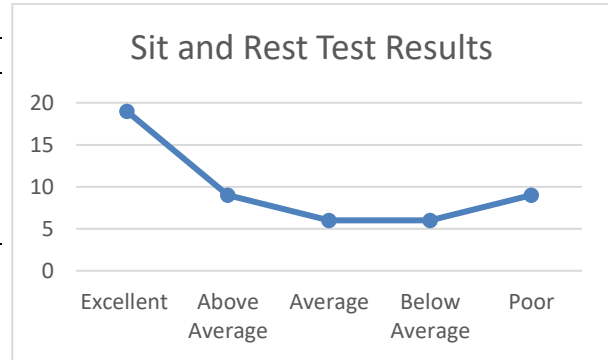


Figure 3. Sit and Rest Test Results

Figure 3 depicts the results of the sit and rest test for athletes in the Pekalongan City PORProv 2023, with an average score of 18.45 cm, categorized as sufficient.

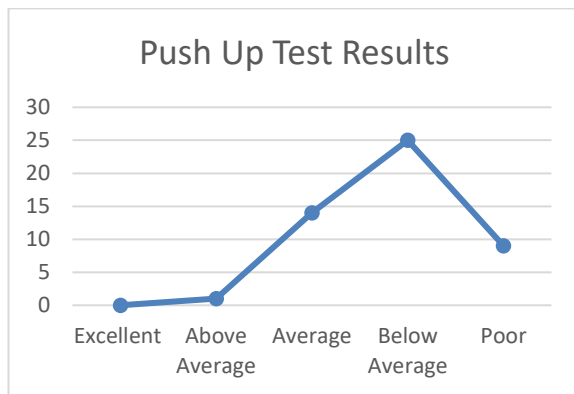


Figure 1. Push Up Test Results.

Figure 1 shows the push up test results of Pekalongan City Porprov athletes in 2023 with an average of 32.31 times for 1 minute in the less category.

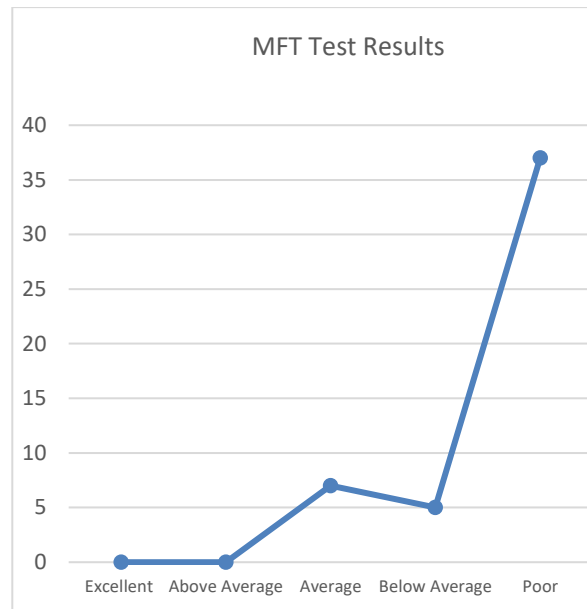


Figure 4. MFT Test Results

Figure 4 displays the results of the MFT (Maximal Fitness Test) for athletes in the Pekalongan City PORProv 2023, with an average score of 32.03 ml/kg, categorized as insufficient.

Based on Figures 1 to 4, it can be concluded that the physical condition of athletes in the Pekalongan City PORProv 2023 is classified as insufficient.

DISCUSSION

The purpose of this study is to determine the level of physical fitness of athletes in Pekalongan City in 2022, as well as to establish new norms regarding athletes' physical fitness. The physical fitness items used as instruments in this study are:

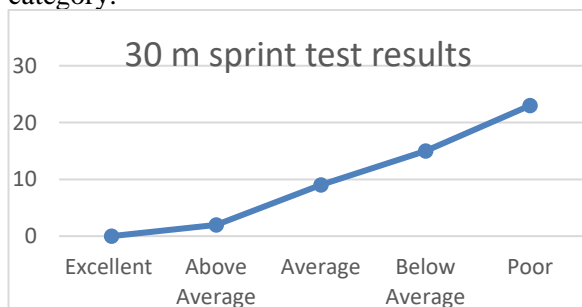


Figure 2. Results of the 30 meter run test

Figure 1 shows the results of the push-up test for athletes in the Pekalongan City PORProv 2023, with an average of 32.31 repetitions in 1 minute, categorized as below average.

1) arm muscle strength, 2) speed, 3) flexibility, and 4) endurance.

The research findings indicate that overall, the results of the physical fitness tests for athletes in Pekalongan City in 2023 fall into the "poor" category. The results indicating the "poor" category are influenced by several factors, including: 1) training factors, 2) principles of training load, 3) rest factors, 4) healthy lifestyle habits, 5) environmental factors, and 6) dietary factors (Pujianto, 2015). According to Sajoto as cited in Mahendra (2014), physical fitness development in sports requires athletes to have certain physical conditions, such as strength, endurance, muscular power, speed, coordination, flexibility, agility, balance, accuracy, and reaction.

Physical fitness can be improved through training. An athlete will develop their skills from basic techniques to more advanced techniques if they have sufficient physical fitness (Hinda Zhannisa & Sugiyanto, 2015). Achieving excellent physical fitness requires a long training process (Harsono & Sugiantoro, 1988). According to Sajoto as cited in Pujianto (2015), physical fitness training can be divided into two types of programs. First, training programs for improving physical fitness either component-wise or as a whole. Second, training programs for maintaining physical fitness, which are designed to reach peak condition status based on the specific physical fitness requirements of the respective sports branch in a tournament or specific competition.

Meanwhile, according to Burgess (1993), "The main components of physical conditioning are cardiovascular endurance, flexibility, muscular strength and endurance, and skill development. The cardiovascular system is conditioned most effectively by active exercise such as running, swimming, or bicycling, and to a lesser degree, by weight resistance exercise and arm-cranking." This implies that the main components of physical fitness include cardiovascular endurance, flexibility, muscular strength and endurance, and skill development. The cardiovascular system can be effectively conditioned through activities such as running, swimming, or cycling, and to a lesser extent, through weight resistance exercise and arm-cranking.

Endurance refers to the ability to work or train for an extended period without experiencing fatigue (Maya Kurnia & Kushartanti, 2013). It is the ability of muscles to contract or work for a

relatively long period of time. With good endurance, an athlete's performance remains optimal over time because they have a sufficiently long time until fatigue sets in (Prakoso & Sugiyanto, 2017). Endurance is crucial because if an athlete has poor endurance, they will not be able to sustain themselves throughout a competition. In certain sports, reaching the finals may require multiple matches, thus good endurance is highly important.

Strength, in general, refers to the ability of the entire muscular system to overcome resistance or load (Hinda Zhannisa & Sugiyanto, 2015). Muscle strength plays a significant role in sports, particularly in muscle strength. Muscle strength is vital as the support in playing requires constant active movement to facilitate motion. On the other hand, strength supported by speed will result in good acceleration. Speed is the ability of muscles or a group of muscles to respond to stimuli as quickly or briefly as possible (Hinda Zhannisa & Sugiyanto, 2015). One of the required aspects of speed in sports is reaction speed. Reaction speed is necessary for quick reflexive running. This research explains that physical fitness is a crucial aspect in achieving success. A good level of physical fitness will guide athletes to develop basic techniques into more advanced ones.

CONCLUSION

Based on the research findings and data analysis conducted, it can be concluded that the physical condition of the athletes from Pekalongan City in 2023 can be categorized as "poor". Based on the research results, it is hoped that this information will be useful for coaches in improving performance.

Athletes can engage in additional training outside of regular training hours. Coaches can focus on improving and enhancing the physical abilities of the athletes. By implementing these recommendations, it is expected that the athletes' physical condition and overall performance can be enhanced.

ACKNOWLEDGEMENT

We, the research team, would like to express our gratitude to the Ministry of Education, Culture, Research, and Technology, through BPI (Indonesian Institute of Sciences) and LPDP (Indonesian Endowment Fund for Education), for their contribution to the preparation of this article.

Their support has been instrumental in the completion of this research.

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