

STUDENT'S MOTOR PERFORMANCE FITNESS ANALYSIS AT ELEMENTARY SCHOOL TEACHER STUDY PROGRAM UNIVERSITY OF MATARAM

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ABSTRACT

Physical fitness and physical activity are the main modalities for physical and mental health, but the level of physical activity and physical fitness decreases in adolescents, especially college students. This study examines physical performance which is a component of physical fitness in college students. Research using a survey with a descriptive approach. 30 students of the Elementary School Teacher Education Study Program (PGSD) of the Faculty of Teacher Training and Education (FKIP) at the University of Mataram consisting of 15 boys and 15 girls with an average age of 18.93 years were involved in this research. The data collection technique used a performance test, namely (1) a standing long jump test (broad jump) to measure the explosive power of the leg muscles; (2) an Agility Shuttle 10 meters (4 x 10 meters) which aims to measure agility and running speed; (3) 20 Meter Dash which aims to know the speed. Data analysis using descriptive statistics. The results showed that the basic locomotor skills of PGSD students were included in the low category. It is necessary to identify the factors that influence the low interest in physical activity of students and formulate appropriate strategies to increase physical activity and physical fitness of PGSD students.

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1. INTRODUCTION

Many health benefits can be provided by physical activity including reducing the risk of obesity and type 2 diabetes, and other positive effects on psychological well-being and reducing stress (Conn, 2010; Conn et al., 2009; Reiner et al., 2013). For this reason, regular and measurable physical activity will make a real contribution and play an important role in preventing chronic disease and psychological health, as well as having a major impact on improving physical performance. Although most people understand physical activity with its various benefits, one-third of adults worldwide do not meet daily physical activity recommendations by doing 150 minutes of moderate-intensity physical activity per week (Hallal et al., 2012a; World Health Organization, 2010).

Physical inactivity or sedentary behavior will be accompanied by an increased prevalence of being overweight (Silveira et al., 2022), thereby making individuals more vulnerable to an increased risk of cardiometabolic diseases (Bauer et al., 2014; Silveira et al., 2021; Stevens et al., 2012). Being overweight as a public health problem affecting more than 30% of adults is predicted to continue to increase to 33% in 2030 (Finkelstein et al., 2012; Ng et al., 2014), which is a pretty fantastic number. This phenomenon gave rise to

various policies to increase individual participation to be actively involved in regular physical activity (Castelli, 2019), including in children and young people (Kohl et al., 2012). However, the implementation of this policy is not as easy as turning the palm and is a challenge for all parties (Mutikainen et al., 2015).

The phenomenon of laziness of movement does not only occur in people who are old but is also experienced by many students. Student lifestyles tend to be unhealthy (Arief et al., 2020; Hendsun et al., 2021; Miko & Pratiwi, 2017; Utami et al., 2021). Eating fast food and staying up late are the daily habits of college students (Fina, 2020; Situmorang, 2022). Playing online games using gadgets or laptops until late at night is common. According to one study, the excessive use of gadgets has many bad effects on health (Abdu et al., 2021; Ardyansyah, 2019; A'yun et al., 2018; Nainggolan, 2017; Widiyono, 2020). What's more, the dense lecture activities and the piling up of assignments, make students stressed and lack rest time. The density of these activities made most students lazy to move. What's more, with online lectures, students do less physical activity. The implication is a decrease in the level of physical fitness of students.

To date, limited research has mostly focused on motor performance as an enabling factor for physical activity engagement and reduced health risks. There is still no research that digs deeper into how physical performance is related to physical fitness at the student level, especially in Elementary School Teacher Education (PGSD) students who tend to have low physical activity characteristics. For this reason, the study of physical performance is very relevant to find out the level of their physical performance. Even though physical activity will be very closely related to physical fitness which is not only important for healthy growth and development but will greatly support the learning process. Various studies show that various physical activities, both carried out individually and in teams, have a positive impact on the brain and school performance (Lam, 2021). The essay reviewed by (Basch, 2020) from Columbia University describes that good physical performance will support brain function including increasing oxygen flow to the brain, and increasing the number of brain neurotransmitters that support the ability to focus, concentrate, learn, remember, and handle stress, the number of neurotrophins brain-derived inputs are also increased thereby ensuring the survival of neurons in brain areas responsible for learning, memory, and higher thinking (Edwards et al., 2011; McIsaac et al., 2015; Muntaner-Mas et al., 2022; Srikanth et al., 2015; Trost, 2007). Recent studies conducted at the University of Illinois also prove that children who are physically fit are more likely to excel and achieve higher grades (Mitchell, 2020).

Various existing studies have proven how important physical activity is for every individual, including young people or students. For this reason, it is very important to know how students' motor performance is the main study so that later it will have an impact on increasing their academic achievement. This research does not provide special treatment to research subjects but only wants to know the extent of the subject's level of physical performance. Through this research, it is expected to find new data related to the level of physical performance related to student physical fitness so that it can be used to formulate policies for maintaining student health.

2. RESEARCH METHOD

The research design used is survey research with a descriptive approach. The researchers in this study did not give special treatment to the research subjects. Research is carried out naturally to find out the actual condition without treatment. The population in this study were students of Elementary School Teacher Education (PGSD), Faculty of Teacher Training and Education (FKIP), University of Mataram. The sample was determined using a random sampling technique that was selected from various batches. The number of samples is 30 students. Respondents involved in this study were PGSD students with an average age of 18.93 years. Participants were randomly selected from all students taking physical education, sports, and health courses. Data is collected through physical performance tests conducted to measure several important components related to physical fitness. Previously, participants were given consent to clarify several aspects related to this study before data collection, such as testing methods, research objectives, and several other matters. Participants who take this physical performance test are certain to have met the requirements to be involved in data collection. In the consent form, several important aspects were filled in by the participant such as the participant's personal information, contact details (emergency contact information in case of problems while taking the test), medical information, and consent from the participant.

Data collection techniques used performance tests, namely (1) the standing long jump test (broad jump) which this test is used to measure explosive leg strength or to measure leg explosive power (Wood, 2008a); (2) the Agility Shuttle Run 10 meters (4 x 10 meters) which aims to measure agility and speed when running between two lines with a distance of 10 meters to pick up small blocks (Wood, 2008b); (3) 20 Meter Dash (Walker, 2016) which aims to determine acceleration, as well as a reliable indicator of speed, agility, and speed.

The Standing Long Jump Test (Broad Jump)

The participants stand behind the line that has been marked in the area. Competitors will perform a two-foot takeoff jump and land with a two-foot takeoff, with the arms swinging back and the legs bent rhythmically approximately 90 degrees forward (Maliki et al., 2018). Participants jump as far as possible without falling backward and must land on both feet. This test will not be recognized if the participant fails to follow the established procedures. Participants experimented three times, of the three trials where the farthest score obtained was recorded as the test result.

20 Meter Dash

All participants run as fast as possible through a certain distance with a record of the time taken. The distance from the start line to the finish line is 20 meters. Calculation and completion of the period begin when each leg passes the starting point and one of the legs approaches the endpoint. Competitors must ensure a steady stance before starting to run, starting from a fixed position, with their feet back to the start line without making any movement (Musa et al., 2019). The duration of the participants' run from the start line to the finish line was recorded by the officer using a stopwatch.

The Shuttle Run Test 4x10 Meters

The 4x10 m shuttle run test was used to assess movement speed, agility, and coordination (motor skills) in children and adolescents (Kolimechkov et al., 2019). The tests were carried out at the maximum speed and recorded in seconds using a stopwatch to an accuracy of 0.1 seconds. After doing the test, you need to evaluate each result related to age and gender.

Data analysis using descriptive statistics. After the test results are obtained, they are converted according to the categorization of each test item, and the categorization is adjusted based on gender. The results of descriptive statistics are average, maximum value, minimum value, and percentage. Data is presented in the form of tables and diagrams.

3. RESULT AND DISCUSSION

The physical performance tests tested on the subjects of this study were the long jump without a prefix, the 4x10 meter shuttle runs, and the 20-meter run. There were 30 students who became the research sample, consisting of 15 boys and 15 girls with an average age of 18.93 years. The characteristics of the respondents who became the sample in this study can be described as follows.

Table 1. Characteristics of Respondents

Variable	Category	Frequency	Percentage (%)
Gender	Male	15	50.00
	Female	15	50.00
Age	18	8	26.67
	19	16	53.33
	20	6	20.00
Origin	Mataram City	5	16.67
	West Lombok Regency	6	20.00
	Central Lombok Regency	2	6.67
	East Lombok Regency	4	13.33
	North Lombok Regency	4	13.33
	Sumbawa Regency	2	6.67
	Dompu Regency	1	3.33
	Bima Regency	3	10.00
	Bima Regency	2	6.67
	West Sumbawa Regency	1	3.33

Measurement of physical performance abilities related to physical fitness between male participants and female participants uses different indicators. After the data is analyzed according to the indicators set, then the data is presented in the form of a diagram.

The standing broad jump test is a form of test offered to respondents to determine the explosive power of their leg muscles. This test is carried out starting by standing with your feet shoulder-width apart behind the

starting line. Next, the respondent squats and jumps as far forward as possible. The movement ends with landing on both feet and then measuring the distance of the jump from the start line to the respondent's heel. There are several elements involved in the long jump without a start, including strength, body balance, and accuracy when landing. The explosive power of the heel muscles can be seen from the distance the students can jump. In the following, descriptive statistics can be presented on the jump distances produced by male and female students during the study.

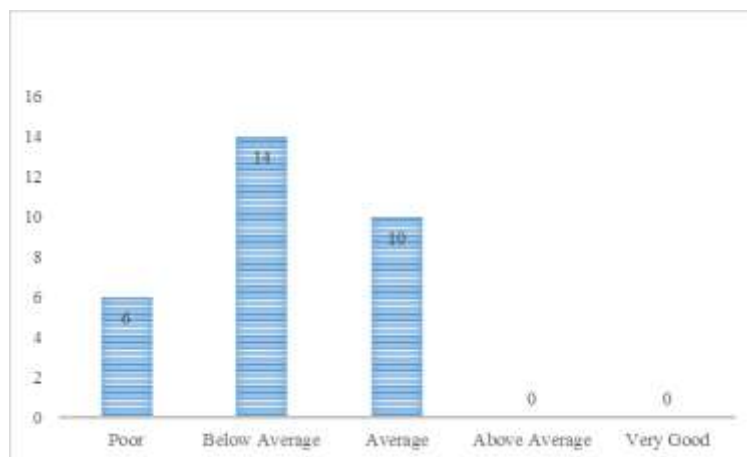


Figure 1. Results of the Standing Long Jump Test (Broad Jump)

Based on the indicators that have been determined, the ability to jump long without a prefix, male and female students can be classified into five criteria, namely very good, good, moderate, poor, and very poor. In Figure 1 it can be seen that 20% of male and female students who can jump long without a prefix are in the very poor category, 47% are less, and 33% are moderate. Good and very good categories each 0%. This means that none of the male and female students can jump without a prefix in these two categories. This indicates that the long jump ability without a prefix for PGSD students is included in the very low category.

The second component of physical performance tested on students is the 4x10 meter shuttle run. This test is used to measure speed, agility, and cardiorespiratory endurance (Tomkinson et al., 2018). The shuttle run test is carried out by running continuously back and forth between two marked lines at a certain speed and varying degrees of intensity and duration. While the distance set in this test is 10 meters between lines with a total frequency of back and forth carried out 4 times. In addition to its main purpose to measure physical performance, especially in the components of speed and agility, the shuttle run test is conducted as a way to assess aerobic fitness, namely the body's ability to use oxygen and convert it into energy and anaerobic ability, namely the body's ability to convert glucose into energy without oxygen (Maupin et al., 2018). In the shuttle run test, the fastest time is used as the result of the test, the less time it takes to complete the 4x10 meter shuttle run, the better it indicates that the sample has good speed and agility. For male students, it can be categorized as very good if they can complete the shuttle run. less than 12.10 seconds, while for women less than 12.42 seconds. Shuttle runs can be categorized as very few if they are completed in more than 16.40 seconds for men and 17.40 seconds for women.

Based on the results of the shuttle run test conducted on male and female students, it can be seen that the student's ability is still very low. The following shows the results of measuring the shuttle run ability of PGSD students.

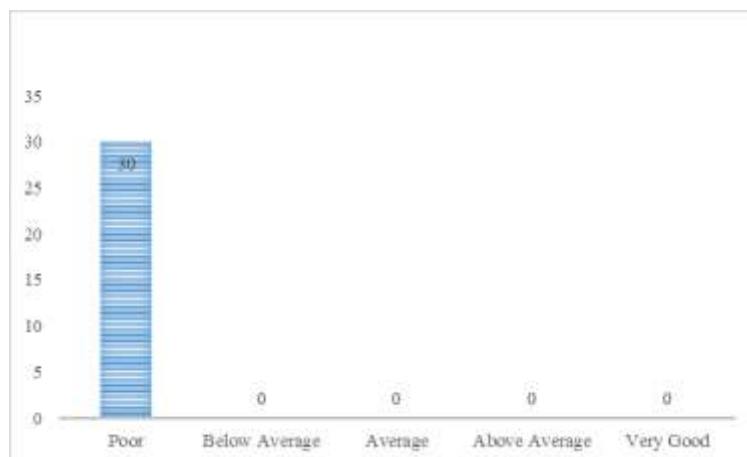


Figure 2. Result of Agility Shuttle Run 10 meters (4 x 10 meters)

Based on Figure 2, it can be seen that of the 30 samples tested, both males and females were in the very poor category. This means that none of the male and female students can complete the shuttle run according to the set criteria.

The third component of physical performance that is tested on students is the 20-meter run (sprint). In this 20-meter sprint test, the respondent must cover a distance of 20 meters in the shortest possible time. Watched from standing upright or starting standing behind a predetermined starting line then the tester gives a signal as a signal to the subject to start running as fast as possible. The timekeeper stands at the finish line by starting the time when the start running signal is given and stopping when the subject crosses the finish line with the upper body to an accuracy of 0.1 seconds. The results obtained by the subject were then converted to the norm (Bös, 2016). Based on the measurements that have been made, most students can run in the moderate category. The following shows the results of the 20-meter running measurements for male and female students.

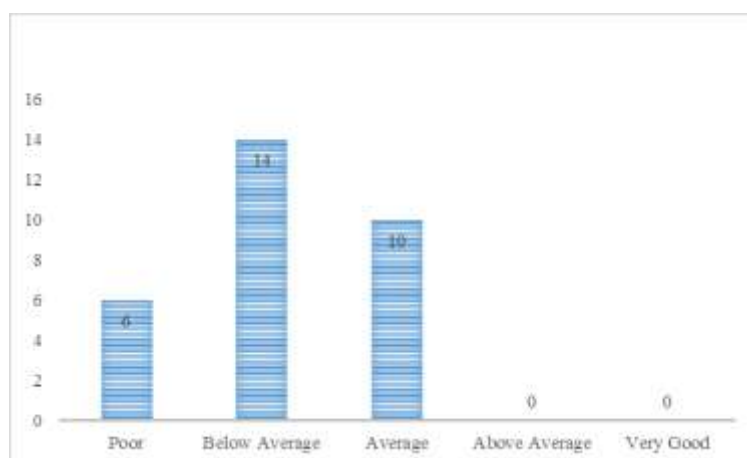


Figure 3. Results of 20 Meter Dash

Based on Figure 3, it can be seen that the ability to run 20 meters for students who fall into the moderate category is 60%, the less category is 13% and the category is very poor is 27%. The performance test for the 20-meter run also produced data that was not much different from the performance test for the two previous aspects, namely that no student could reach the good and very good categories. This indicates that the ability of students in the test performance of the 20-meter run is also not very good.

Based on the three aspects of motor performance tested on male and female students as a representation of physical condition, it can be seen that the physical ability of PGSD students is relatively low. This should be a concern considering that physical performance is one of the most important aspects to support physical fitness as the ability of the neuromuscular system to support daily tasks. Motor performance is very important for human function because it affects the ability of each individual to move actively and interact with people and objects in their environment, it also contributes to the development of language, play, academic and adaptive behavior (Bishop, 2014). In a study of physical fitness and physical activity, both of them significantly show cognitive benefits for the perpetrators. In randomized controlled trials on the Fitness Improves Thinking

(FITKids) program, children who actively participate in the program benefit from physical fitness and improve their working memory (Ericsson & Karlsson, 2014; Hillman et al., 2014; Pesce et al., 2009). Movement quality is also being emphasized rather than movement quantity, due to the possible long-term effects of motor training on physical and cognitive performance (Ericsson & Karlsson, 2014).

Motor performance refers to the temporary status of the subject's motor behavior that is assessed during a particular session, so the results obtained from tests on the 3 main components in this study are still very low which also indicates that PGSD students also have a low level of physical fitness as well. Low physical fitness in adolescents is the result of a lack of physical activity (Joav Merrick et al., 2005; Lee et al., 2012; Tomkinson et al., 2003), which is also a health problem and causes premature death worldwide (Aires et al., 2011; Dencker et al., 2012). The prevalence of adolescents who do not meet current guidelines for physical activity is estimated to be 80.3% (Hallal et al., 2012b), a truly fantastic figure. Poor physical fitness is closely related to an increased risk of various diseases, especially cardiovascular disease in children and adolescents (Brophy et al., 2012; Ortega et al., 2013).

Given the various reviews and studies with very strong evidence that physical fitness is a critical marker of adolescent and adult health, it is necessary to formulate an effective and targeted prevention strategy for adolescents. Identification of various factors related to fitness in adolescence is one of the main priorities. The beneficial effects of physical activity have long been studied and are well known, but remain a challenge to increase, especially in female adolescents (Charlton et al., 2014), who tend to be physically inactive and overweight (Mutikainen et al., 2015). Several efforts that can be recommended to increase physical activity for adolescents include reducing the cost of physical activity activities without reducing the quality presented, designing physical activities that are more easily accessible locally, increasing the standard of existing facilities, programming activities that are more varied or varied for adolescents, providing physical activity that young women like, for example, sports that are fun, social and not competitive.

4. CONCLUSION

Based on the results of the research and discussion, it can be concluded that the physical performance of PGSD students in 2020 is in a low category. Based on the physical components tested on students, it can be seen that students' highest achievements only reach a moderate level in the 20-meter sprint aspect. Two other aspects, namely running back and forth and long jump without a prefix, are still in the poor category, even in the aspect of running back and forth, all samples tested fall into the very poor category. The low level of these three physical performance components indicates a low level of student physical fitness. Identification of factors that influence students' low interest in physical activity and the formulation of appropriate strategies to increase opportunities to participate in physical activity and improve physical fitness must be top priorities.

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