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Physical Fitness Evaluation of Rural Junior High School Students in Physical Education Learning

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ABSTRACT

Introduction. Physical fitness is an important component in supporting students' learning activities and physical development in schools. Physical Education (PE) learning plays a strategic role in improving students' physical fitness through structured physical activities. Therefore, this study aimed to evaluate the physical fitness components of students in PE learning at SMP Negeri 2 Tombolo Pao. **Methods.** This study used a quantitative approach with a descriptive evaluative design. The sample consisted of 36 eighth-grade students selected using a purposive sampling technique. The instrument used was a physical fitness test consisting of a 20-meter run, sit-ups, push-ups, shuttle run, and sit-and-reach tests to measure speed, muscle strength, agility, and flexibility. Data were analyzed using descriptive statistics, including mean, standard deviation, percentage, and physical fitness category analysis using IBM SPSS Statistics. **Results.** The results showed that students' physical fitness levels were generally in the good category. Speed obtained an average score of 4.21 seconds, agility 12.84 seconds, and flexibility 24.15 cm, all categorized as good. Meanwhile, abdominal and arm muscle strength were categorized as moderate, with average scores of 21.47 repetitions and 18.36 repetitions, respectively. The distribution of physical fitness levels indicated that 38.89% of students were in the good category, 30.56% in the moderate category, 13.89% in the very good category, 13.89% in the poor category, and 2.78% in the very poor category. **Conclusions.** PE learning contributed positively to students' physical fitness levels; however, several components, particularly muscle strength, still require improvement through more structured and continuous physical activity programs. Therefore, Physical Education teachers are expected to develop more innovative and fitness-oriented learning models to improve students' physical fitness comprehensively.

1. Introduction

Physical Education is an integral part of the education system, playing a vital role in developing students' physical abilities, motor skills, health, and character. Physical Education learning is not only oriented toward mastering movement skills but also aims to improve students' physical fitness as a primary foundation for supporting learning activities and daily life. Good physical fitness enables students to perform activities optimally without experiencing excessive fatigue and to have greater endurance (World Health Organization [WHO], 2024).

Physical fitness is a physical condition that reflects a person's ability to perform physical activities effectively and efficiently. Components of physical fitness include cardiorespiratory endurance, muscular strength, muscular endurance, speed, agility, flexibility, and motor coordination (Wang et al., 2025). During adolescence, physical fitness is a crucial aspect supporting students' physical growth and development. Research shows that students with good levels of physical fitness tend to have higher

levels of concentration, more stable psychological well-being, and better academic performance than students with low levels of fitness (Zhou, 2025).

In recent years, adolescents' physical activity levels have declined due to changing lifestyles and the increasing use of digital technology. Sedentary activities such as playing with gadgets, watching television, and prolonged use of social media have impacted students' physical fitness (Ng et al., 2021). The WHO (2024) reports that most adolescents worldwide do not meet the recommended minimum of 60 minutes of moderate to vigorous physical activity per day. This situation presents a challenge for schools in increasing student participation in physical activity through effective and innovative physical education Physical Education learning.

Physical Education learning plays a strategic role in improving students' physical fitness through planned, systematic, and sustainable physical activity. Learning programs involving active movement activities have been shown to improve students' biomotor skills such as strength, agility, endurance, and flexibility (Lubans et al., 2022). Furthermore, active learning approaches based on games and structured physical activity are also considered effective in increasing student motivation and engagement in Physical Education learning (Peng et al., 2025).

Physical fitness evaluation is a crucial part of physical education learning because it provides an objective picture of students' physical condition. Evaluations are conducted to determine students' fitness levels and serve as the basis for developing training and learning programs tailored to their needs (Ortega et al., 2021). Regular physical fitness monitoring also helps teachers identify weaknesses in specific fitness components, allowing for more effective and measurable instruction.

Previous research has shown that the physical fitness levels of junior high school students vary and are influenced by various factors such as physical activity, nutritional status, exercise motivation, the school environment, and family support (Liu et al., 2022). Novak et al. (2025) explained that the quality of physical education programs and school sports facilities significantly correlated with students' physical fitness levels. Furthermore, research by García-Hermoso et al. (2023) showed that regular physical activity in Physical Education lessons can improve students' flexibility, muscle strength, and cardiorespiratory health.

In Indonesia, evaluating students' physical fitness in Physical Education lessons remains a significant concern due to the prevalence of students with low fitness levels due to lack of physical activity and low participation in sports outside of school (Rahman & Kamaruddin, 2023). This situation highlights the need to optimize Physical Education lessons so that they focus not only on sports skills but also on improving students' overall physical fitness.

SMP Negeri 2 Tombolo Pao, as a junior high school, plays a crucial role in supporting the improvement of students' physical fitness through Physical Education lessons. However, the current status of students' physical fitness components at these schools remains unclear. Therefore, this study was conducted to evaluate students' physical fitness components in physical education lessons. This study aims to provide a realistic picture of students' physical condition and serve as evaluation material for developing physical education and health education programs in schools. Research on evaluating the physical fitness of junior high school students in rural areas of Gowa Regency is still limited, particularly on the integration of physical education and health education into students' physical fitness components. Based on this background, this study is expected to contribute to physical education teachers, schools, and other researchers in developing more effective, innovative physical education lessons that are oriented toward continuously improving students' physical fitness.

2. Methods

This study used a quantitative approach with a descriptive evaluative research design. The aim of the study was to evaluate the physical fitness components of students in Physical Education learning

at SMP Negeri 2 Tombolo Pao. The descriptive approach was chosen to provide an objective picture of students' physical fitness levels based on the results of physical fitness component measurements.

The study was conducted in the even semester of the 2025/2026 academic year at SMP Negeri 2 Tombolo Pao. The population was all eighth-grade students enrolled in Physical Education learning. The sampling technique used purposive sampling, considering that students were actively participating in Physical Education learning, were present during the study, and were in good health at the time of the test. Purposive sampling was chosen because the study required subjects who met certain characteristics to optimally measure physical fitness. The sample size was 36 students, consisting of both male and female students.

The research instrument used the Indonesian Physical Fitness Test (TKJI) for ages 13–15, a standardized and widely used test in physical fitness research in Indonesia. The TKJI was chosen because it aligns with the characteristics of junior high school students and has good validity and reliability in measuring students' physical fitness. The physical fitness components measured include speed, muscular strength and endurance, explosive power, and cardiorespiratory endurance. The types of tests used were: (1) a 50-meter sprint to measure speed, (2) a pull-up for male students and a bent-elbow hang for female students to measure arm and shoulder muscle strength and endurance, (3) a 60-second sit-up to measure abdominal muscle strength and endurance, (4) a vertical jump to measure leg muscle explosive power, and (5) a middle-distance run of 800 meters for female students and 1,000 meters for male students to measure cardiorespiratory endurance.

The validity of the instruments in this study used content validity, which refers to the national physical fitness measurement standards developed by the Ministry of Youth and Sports of the Republic of Indonesia. The TKJI instrument has been widely used to measure students' physical fitness and has been found to be suitable for assessing the physical abilities of school-age students. The instrument's reliability is demonstrated by the consistency of measurement results for each test item, with a high reliability rating based on the TKJI guidelines. To maintain measurement consistency, all tests were administered using the same procedures, measuring instruments, timeframe, and examiners for all study participants.

The research procedure began with initial observations and coordination with the Physical Education teacher regarding the study schedule. Next, the researcher explained the purpose and procedures of the test to the students. Prior to the test, all participants performed a warm-up to reduce the risk of injury during data collection. The test was conducted directly on the school field with the assistance of the Physical Education teacher and a research assistant. Each student's measurement results were recorded on a prepared observation sheet in accordance with the TKJI assessment standards.

The data analysis technique used descriptive statistics by calculating the average (mean), standard deviation, percentage, maximum, and minimum scores for each physical fitness component. Next, the measurement results were classified into very good, good, moderate, poor, and very poor categories based on the TKJI assessment norms for 13–15-year-olds. Data analysis was conducted using SPSS version 25.

To ensure data validity, the study followed the same testing procedure for all participants. Furthermore, the researchers ensured that all participants took the test in good health and used measurement facilities that met TKJI implementation standards, ensuring the data obtained had a high level of objectivity.

3. Results

This study aims to evaluate the physical fitness components of students in Physical Education learning at SMP Negeri 2 Tombolo Pao. Measurements were conducted on several physical fitness components, including speed, muscle strength, agility, and flexibility. The study sample consisted of 36 eighth-grade students who participated in the entire physical fitness test series.

Based on the measurement results, data on students' physical fitness levels were obtained, which are presented in the following table.

Table 1. Descriptive Results of Students' Physical Fitness Components

No	Physical Fitness Component	Test Type	Mean	SD	Category
1	Speed	20-meter run (seconds)	4.21	0.38	Good
2	Abdominal muscle strength	30-second sit-up (repetitions)	21.47	3.82	Moderate
3	Arm muscle strength	Push-up (repetitions)	18.36	3.11	Moderate
4	Agility	Shuttle run (seconds)	12.84	0.91	Good
5	Flexibility	Sit and reach (cm)	24.15	4.26	Good

Based on Table 1, the students' speed component averaged 4.21 seconds, falling within the good category. These results indicate that most students possess adequate motor skills for sprinting. The agility component also fell within the good category, with an average score of 12.84 seconds, indicating that students' ability to change direction quickly and in a coordinated manner is quite optimal.

The abdominal muscle strength and arm muscle strength components were also found to be in the moderate category. The average number of sit-ups was 21.47, while the average number of push-ups was 18.36. These findings indicate that students' muscle strength and endurance still need to be improved through more structured physical training in Physical Education lessons.

Meanwhile, the flexibility component averaged 24.15 cm, falling within the good category. This indicates that most students possess adequate body flexibility, which can support physical activity and reduce the risk of injury during exercise.

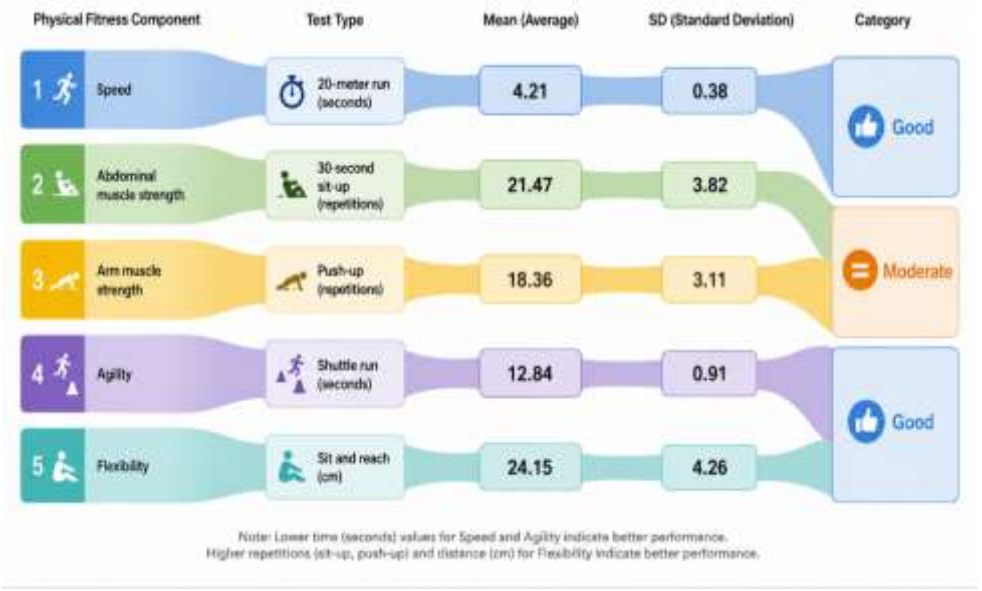

Figure 1. Physcal Ftess Components

In addition to descriptive analysis, the study also categorized students' physical fitness levels based on assessment categories. The distribution of student physical fitness categories is shown in the following table.

Table 2. Distribution of Students' Physical Fitness Levels

No	Category	Frequency	Percentage (%)
1	Very Good	5	13.89
2	Good	14	38.89
3	Moderate	11	30.56
4	Poor	5	13.89
5	Very Poor	1	2.78
	Total	**36**	**100**

Based on Table 2, the majority of students are in the good category with a percentage of 38.89%, followed by the moderate category at 30.56%. Meanwhile, students in the poor and very poor categories are still found, although in relatively small numbers. These results indicate that in general the level of physical fitness of students at SMP Negeri 2 Tombolo Pao is in the good category, but still needs to be improved, especially in the components of muscle strength and physical endurance through more active Physical Education learning that is oriented towards improving students' physical fitness.

4. Discussion

The results of the study showed that the physical fitness level of students at SMP Negeri 2 Tombolo Pao was generally in the good category. This finding indicates that the Physical Education (PE) learning implemented at the school has positively contributed to the development of students' physical condition. Physical fitness is a crucial component in supporting students' ability to carry out daily activities without experiencing excessive fatigue. Furthermore, a good level of physical fitness is also associated with improved concentration, mental health, and quality of life (World Health Organization [WHO], 2024).

The speed and agility components in this study were in the good category. These results indicate that students have optimal motor skills for activities that require rapid changes of direction and position. This ability can be influenced by PE learning activities involving games, coordination exercises, and structured physical activities. Active, movement-oriented PE learning can significantly improve students' motor skills, agility, and physical performance (Wang et al., 2025).

The results of the study indicated moderate levels of abdominal muscle strength and arm muscle strength. This condition indicates that students' muscle strength and endurance still need to be improved through more systematic and continuous training. Low muscle strength in adolescents can be influenced by a lack of moderate to high-intensity physical activity and increased sedentary behavior due to excessive use of digital devices. According to the WHO (2024), most adolescents worldwide do not meet the recommended minimum of 60 minutes of daily physical activity, resulting in a decline in physical fitness levels.

The results of this study also indicate that students' flexibility components are in the good category. Flexibility is the ability of joints and muscles to move maximally within their range of motion. A good level of flexibility is crucial for supporting physical activity performance and reducing the risk of injury during physical education lessons. Stretching activities performed before and after lessons

are suspected to be a contributing factor to these results. Research indicates that stretching exercises and regular physical activity have a positive relationship with improving flexibility and movement abilities in school students (Gomes et al., 2025).

The distribution of the study results shows that the majority of students fall into the good and moderate categories, although there are still some students in the poor and very poor categories. Differences in physical fitness levels among students can be influenced by various factors such as nutritional status, active lifestyle, motivation to exercise, environmental support, and physical activity habits outside of school. Research shows that a school environment that supports physical activity, adequate sports facilities, and the quality of physical education instruction are significantly related to students' physical fitness levels (Novak et al., 2025).

Physical education instruction plays a strategic role in improving students' physical fitness through systematic, planned, and enjoyable physical activity. Physical education teachers need to develop innovative learning models such as active games, circuit training, and movement-based activities to motivate students to participate in learning. Research shows that an active learning approach in physical education can increase student participation while improving overall physical fitness components (Peng et al., 2025).

Furthermore, regular physical fitness evaluations are crucial for monitoring students' physical development. Evaluations not only serve to determine learning outcomes but also serve as a basis for developing exercise programs tailored to students' needs. Through regular evaluations, teachers can identify low levels of fitness components, allowing for more effective and measurable direction in Physical Education instruction. Regular physical fitness monitoring in the school environment can help improve the quality of students' health and physical activity (Zaimsyah et al., 2025).

The results of this study indicate that the physical fitness of students at SMP Negeri 2 Tombolo Pao is in the fairly good category, but still requires improvement, particularly in muscle strength and physical endurance. Therefore, optimizing physical education learning through more varied, intensive physical activities oriented toward improving physical fitness is necessary to ensure students maintain healthy physical conditions and support optimal learning.

5. Conclusion

Based on the research results, it can be concluded that the physical fitness level of students at SMP Negeri 2 Tombolo Pao is generally in the good category. Speed, agility, and flexibility components showed relatively good results, while abdominal muscle strength and arm muscle strength components remained in the moderate category, requiring improvement through more structured and continuous training activities within Physical Education learning.

The research results also indicate that Physical Education learning plays a crucial role in supporting the improvement of students' physical fitness through active, systematic, and enjoyable physical activities. However, several students still fell into the poor and very poor categories, indicating differences in physical activity levels, exercise motivation, and healthy lifestyles among students.

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