
PHYSICAL FITNESS LEVEL OF ELEMENTARY SCHOOL STUDENTS IN PHYSICAL EDUCATION, SPORTS, AND HEALTH LEARNING

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Abstract

Physical fitness is an important component of students' physical and motor development and plays a significant role in supporting their participation and performance in physical education learning. However, information regarding the physical fitness level of elementary school students, particularly in the context of physical education learning at Lappae 64 Public Elementary School, remains limited. This study was conducted to fill this gap by providing an empirical description of students' physical fitness levels and interpreting their implications for the implementation of physical education learning. This study employed a quantitative approach with a descriptive method. The population consisted of all students in grades IV, V, and VI at Lappae 64 Public Elementary School, totaling 40 students, comprising 22 male and 18 female students. Total sampling was employed; therefore, the entire population was included as the research sample. Students' physical fitness was assessed using the Indonesian Physical Fitness Test (TKJI), which consisted of five components: the 40-meter sprint, bent-arm hang or pull-up, sit-up, vertical jump, and 600-meter run. Data were analyzed using descriptive statistical techniques by calculating the percentage distribution of students across physical fitness categories. The findings indicated that the largest proportion of students (45%) was categorized as having a moderate level of physical fitness, followed by the good category (22.5%), less category (20%), very good category (7.5%), and very less category (5%). These findings indicate that although most students demonstrated a moderate level of physical fitness, 25% of students were still classified in the less and very less categories. This distribution suggests that the existing physical education learning process has not yet resulted in an optimal level of physical fitness for all students and highlights the need for learning activities that systematically accommodate differences in students' physical abilities. Therefore, physical education instruction should be strengthened through structured, progressive, and sustainable physical fitness activities integrated into regular learning. Scientifically, this study contributes empirical evidence concerning the physical fitness profile of elementary school students in the local school context, while practically, the findings can serve as a basis for physical education teachers and schools in developing more targeted fitness programs, monitoring students' physical fitness periodically, and designing learning activities that support the improvement of students' physical fitness.

Keywords: Physical fitness, physical education, elementary school students, TKJI.

INTRODUCTION

Physical education is an integral part of the education system that aims to develop students' physical abilities, motor skills, health, and character. Through physical education, students acquire movement experiences while developing an understanding of the importance of regular physical activity for maintaining health and improving quality of life (Hardi & Mutmainnah, 2024). At the elementary school level, physical education has particular importance because childhood is a critical period for physical growth, motor development, and the establishment of healthy physical activity habits. Therefore, the quality of physical education learning should not only be assessed from students' participation in learning activities but also from its contribution to the development and maintenance of their physical fitness.

Physical fitness is an important component in supporting students' ability to participate effectively in learning activities. Students with adequate physical fitness generally have greater capacity to perform physical activities, maintain endurance during learning, and participate in movement activities without excessive fatigue. Previous research has also demonstrated that physical fitness is associated with students' learning outcomes in physical education. PrimaDuta et al. (2025), for example, found a significant difference in learning outcomes between elementary school students with higher and lower levels of physical fitness, indicating that physical fitness is not merely a health-related attribute but is also relevant to students' participation and achievement in physical education learning. Furthermore, physical fitness contributes to the development of physical and mental health and can become an important foundation for establishing healthy behaviors from an early age (Mulyana et al., 2024).

Despite the important role of physical fitness, maintaining adequate fitness among elementary school students has become increasingly challenging in the context of changing lifestyles. The increasing use of digital devices and the reduction of opportunities for active play can encourage sedentary behavior and reduce children's participation in physical activity (Pradana & Winarno, 2025). Recent empirical evidence supports this concern. Adam and Abdulaziz (2026), for example, reported that 54% of elementary school students in their study were physically inactive and that 90% had moderate-to-low levels of physical fitness. Their findings further demonstrated a significant positive relationship between an active lifestyle and physical fitness ($\rho = 0.513$, $p < 0.05$). These findings indicate that physical fitness should be monitored systematically because changes in students' physical activity patterns may be reflected in their physical fitness condition.

Previous studies have examined physical fitness among elementary school students from several perspectives. Some studies have focused on describing students' physical fitness profiles using standardized fitness tests, while others have investigated factors associated with physical



fitness, such as motor skills, lifestyle, nutritional status, and participation in physical activity. For instance, Allsabab, Putra, and Sugito (2023) examined the relationship between body mass index and physical fitness among elementary school students aged 10–12 years and emphasized the relevance of contemporary lifestyle patterns to students' fitness conditions. More recent research has also demonstrated that motor skills are positively associated with physical fitness, suggesting that the development of speed, strength, endurance, balance, and other motor components should be considered in physical education learning. In addition, intervention research has shown that appropriately designed physical activity programs can improve students' physical fitness, indicating that physical education can function not only as a learning subject but also as a strategic setting for improving students' fitness.

However, the existing literature also reveals an important research gap. Most previous studies have examined physical fitness either by investigating its relationship with other variables or by evaluating particular interventions and student groups. Consequently, empirical information concerning the actual physical fitness profile of students in specific elementary school contexts remains important, particularly for schools that have not previously documented their students' fitness conditions systematically. This gap is relevant because physical fitness levels cannot necessarily be assumed to be identical across schools. Differences in students' physical activity habits, learning environments, access to physical activity, and school-based physical education practices may produce different fitness profiles. Recent comparative research, for example, has demonstrated differences in specific physical fitness components between elementary school students in different environmental settings, reinforcing the importance of examining fitness conditions within their particular school contexts.

A similar issue is evident in studies using the Indonesian Physical Fitness Test (TKJI). Research on elementary school students has reported different distributions of fitness levels across schools, demonstrating that school-specific assessment is necessary rather than relying solely on findings from other locations. Bangun, Syahputri, and Rangkuti (2023), for example, conducted a study because of the absence of empirical data concerning the physical fitness level of students at SD Negeri 054936 Wonorejo. This finding provides an important basis for the present study: without empirical measurement, teachers and schools cannot accurately determine whether the physical fitness condition of their students is adequate, requires improvement, or differs across fitness components.

The urgency of conducting this research is consequently based on the need to establish a measurable baseline of students' physical fitness. Rather than assuming that students' fitness levels are adequate based on their participation in physical education classes, empirical assessment is



necessary to identify the actual distribution of fitness levels among students. The results can reveal the proportion of students who require greater attention and provide a basis for evaluating whether physical education activities need to be adjusted, intensified, or programmed more systematically. This approach is consistent with recent evidence showing that structured physical activity interventions can produce measurable improvements in elementary school students' physical fitness.

The novelty of this study lies in providing a school-specific empirical profile of the physical fitness levels of students in grades IV, V, and VI at Lappae 64 Public Elementary School using the Indonesian Physical Fitness Test (TKJI). Unlike studies that primarily examine causal relationships, correlations, or the effectiveness of particular interventions, this study focuses on establishing an empirical baseline that can be directly interpreted in relation to the implementation of physical education learning at the research site. The novelty is therefore contextual and practical: the study generates previously unavailable evidence concerning the fitness condition of students at Lappae 64 Public Elementary School and translates the distribution of fitness categories into information that can be used for educational evaluation and program development.

METHODOLOGY

This study used a quantitative approach with a descriptive research design, aiming to describe the physical fitness levels of elementary school students during physical education lessons. Quantitative descriptive research is used to obtain a systematic overview of students' physical fitness based on data obtained through physical fitness tests (Rukajat, 2018).

The study was conducted at Lappae 64 Public Elementary School, involving students in grades IV, V, and VI. The study took place during the current semester of the 2025/2026 academic year. The population consisted of 40 students, consisting of 22 boys and 18 girls. Due to the relatively small population, the entire population served as the research sample. Therefore, the sampling technique used was total sampling, which utilizes all members of the population as the research sample (Subhaktiyasa, 2024).

The variable in this study was the physical fitness levels of elementary school students. Data collection was conducted using the Indonesian Physical Fitness Test (TKJI), designed to measure the physical fitness levels of school-age children. The TKJI (Teaching Physical Fitness Test) is a commonly used instrument for measuring students' physical fitness because it has clear assessment standards and has been widely used in physical education research (Susilawati, 2018).

The test components used in measuring physical fitness include: (1) a 40-meter run to measure speed, (2) a hanging elbow bend to measure arm muscle strength and endurance, (3) a 30-



second sit-up to measure abdominal muscle strength, (4) a vertical jump to measure leg muscle explosive power, and (5) a 600-meter run to measure cardiovascular endurance. The results of each test item are then converted into a score based on the TKJI assessment norms to determine the student's physical fitness level.

Table 1. Indonesian Physical Fitness Test Scores for Boys Aged 10-12 Years.

40-meter Run	Bent-arm Hang	30-second Sit-up	Vertical Jump	600-meter Run	Score
Up to 6.3"	51" and above	23 and above	46 and above	Up to -2'09"	5
6.4"-6.9"	31"-50"	18-22	38-45	2'10"-2'30"	4
7.0"-7.7"	15"-30"	12-17	31-37	2'31"-2'45"	3
7.8"-8.8"	5"-14"	4-11	24-30	2'46"-3'44"	2
8.9"-Etc.	Etc-4"	0-3	Etc-23	3'45"-Etc	1

Table 2. Indonesian Physical Fitness Test Scores for Girls Aged 10-12 Years

40-meter Run	Bent-arm Hang	30-second Sit-up	Vertical Jump	600-meter Run	Score
Up to 6.7"	40" and above	20 and above	42 and above	Up to -2'32"	5
6.8"-7.5"	20"-39"	14-19	34-41	2'.33"-2'.54"	4
7.6"-8.3"	8"-19"	7-13	28-33	2'.55"-3'.28"	3
8.4"-9.6"	2"-7"	2-6	21-27	3'.29"-4'.22"	2
9.7"-Etc.	0"-1"	0-1	Etc-20	4'.23"-Etc	1

Table 3. Indonesian Physical Fitness Test Scores (Boys and Girls)

Number	Total Score	Fitness Classification
1	22-25	Very Good
2	18-21	Good
3	14-17	Moderate
4	10-13	Poor
5	5-9	Very Poor

The data analysis technique used in this study was descriptive statistical analysis using percentages to describe students' physical fitness levels. Percentage analysis was conducted to determine the proportion of students in each physical fitness category: excellent, good, moderate, poor, and very poor.



RESULTS

Table 4. Student Physical Fitness Test Results

Classification	40-meter Run	Bent-arm Hang	30-second Sit-up	Vertical Jump	600-meter Run
	Frequency				
Excellent	4	3	5	4	3
Good	10	9	11	12	8
Fair	16	17	15	14	18
Poor	8	9	7	8	9
Very Poor	2	2	2	2	2
Total	40	40	40	40	40

Based on Table 4, the results of the students' physical fitness measurements using five types of tests show variations in ability levels in each component. In the 40-meter run, the majority of students were in the fair category (16 students), followed by 10 in the good category, 8 in the poor category, 4 in the very good category, and 2 in the very poor category. In the bent-arm hang test, the majority of students (17 students) also fell into the moderate category, while 9 students fell into the good category, 9 students fell into the poor category, 3 students fell into the very good category, and 2 students fell into the very poor category.

Furthermore, in the 30-second sit-up test, 15 students fell into the moderate category, 11 students fell into the good category, 7 students fell into the poor category, 5 students fell into the very good category, and 2 students fell into the very poor category. In the vertical jump test, 14 students fell into the moderate category, 12 students fell into the good category, 8 students fell into the poor category, 4 students fell into the very good category, and 2 students fell into the very poor category. Meanwhile, in the 600-meter run test, the majority of students (18) also fell into the moderate category, followed by 9 students fell into the poor category, 8 students fell into the good category, 3 students fell into the very good category, and 2 students fell into the very poor category.

Table 5. Overall Results of the Student Physical Fitness Test

Classification	Score Interval	Frequency	Percentage
Very Good	22-25	3	7.5%
Good	18-21	9	22,5%
Moderate	14-17	18	45%
Poor	10-13	8	20%



Classification	Score Interval	Frequency	Percentage
Very Poor	5-9	2	5%
Total		40	100%

Based on Table 5, it can be seen that the results of the student physical fitness test show variations in classification levels. Three students (7.5%) were in the excellent category, nine students (22.5%) were in the good category, and 18 students (45%) were in the moderate category. Additionally, eight students (20%) were in the poor category, while two students (5%) were in the very poor category.

DISCUSSION

The findings of this study indicate that the physical fitness level of fourth-, fifth-, and sixth-grade students at Lappae 64 Public Elementary School was predominantly in the moderate category. This finding suggests that most students have sufficient physical capacity to participate in daily activities and physical education learning, but their fitness has not yet reached an optimal level. Physical fitness can be understood as a condition that enables individuals to perform daily activities effectively without experiencing excessive fatigue while retaining sufficient energy for other activities (Gunarsa & Wibowo, 2021). Therefore, the moderate fitness level identified in this study should not be interpreted simply as a satisfactory condition, but rather as an indication that there remains considerable potential for improving students' physical capacity through appropriately structured physical education.

The findings are particularly meaningful when considered in relation to the role of physical fitness in elementary school development. At this stage, students are experiencing important physical and motor development, making regular physical activity essential for supporting strength, speed, endurance, and other components of physical fitness. Physical fitness also provides an important foundation for students' participation in physical education learning. Thus, the predominance of the moderate category suggests that physical education learning at Lappae 64 Public Elementary School has an important opportunity to move beyond the development of sports skills and place greater emphasis on systematic fitness development.

One important finding concerns cardiorespiratory endurance, which was measured through the 600-meter running test and was also generally categorized as moderate. This finding indicates that students' capacity to sustain physical activity over a relatively continuous period remains at a level that can still be improved. Cardiorespiratory endurance is particularly important because it reflects the body's ability to sustain prolonged physical activity and is closely associated with



students' ability to participate continuously in physical activities. Satriawan et al. (2024) reported that the physical fitness of school-age children is strongly influenced by the frequency and intensity of regular physical activity. In this context, the moderate level of cardiorespiratory endurance found in the present study may indicate the importance of providing students with more consistent opportunities for activities that stimulate endurance development.

The findings should also be interpreted in relation to the broader pattern of physical activity among children. Changes in children's lifestyles, including increasing engagement with digital devices and reduced opportunities for active play, can limit daily physical activity. When opportunities for physical activity are insufficient, students may not receive adequate stimulus to optimally develop their physical fitness. Consequently, the moderate fitness profile identified in this study may reflect the need for physical education to provide regular and appropriately dosed physical activity rather than relying solely on occasional physical activity during scheduled lessons.

The role of physical education is therefore not limited to teaching specific sports techniques. Well-designed physical education can function as an important setting for establishing active behavior and developing students' physical fitness from an early age. Engaging and varied learning activities can encourage students to participate actively while simultaneously developing physical fitness components such as strength, speed, endurance, and agility (Putri & Almeida, 2017). This perspective is consistent with the present findings, which suggest that students require continued exposure to planned physical activities that are appropriate to their developmental characteristics.

The distribution of students across different fitness categories also has important pedagogical implications. Although the largest proportion of students was in the moderate category, not all students demonstrated the same level of physical fitness. The existence of students in lower fitness categories indicates that a uniform approach to physical education may not adequately address individual differences in students' physical abilities. Teachers therefore need to consider differentiated activities, appropriate levels of intensity, and gradual progression so that students with lower fitness levels can participate safely while progressively improving their physical capacity.

CONCLUSION

The findings demonstrate that the physical fitness of fourth-, fifth-, and sixth-grade students at Lappae 64 Public Elementary School is predominantly at a moderate level. Rather than indicating an optimal fitness condition, this finding suggests that most students possess a sufficient physical capacity to participate in routine physical education activities but have not yet reached a level of fitness that can be considered optimal. The presence of students in the lower fitness categories



further indicates that students' physical fitness needs are not homogeneous and therefore require learning activities that are responsive to differences in individual fitness levels.

The main contribution of this study is the provision of empirical evidence regarding the physical fitness profile of students at Lappae 64 Public Elementary School, a context for which school-specific evidence was previously unavailable. These findings provide a baseline for evaluating physical education learning and indicate that physical education should be oriented not only toward the acquisition of sports and motor skills but also toward the systematic development of students' physical fitness. Thus, the study reinforces the importance of integrating structured and sustainable physical fitness activities into elementary school physical education.

Based on these findings, physical education teachers are recommended to incorporate varied, progressive, and age-appropriate fitness activities into regular instruction, particularly to accommodate students who remain in the lower fitness categories. Schools should support this effort by providing adequate opportunities and facilities for physical activity. Future research should investigate factors associated with students' physical fitness, such as physical activity habits, nutritional status, and learning environments, to provide a more comprehensive basis for developing evidence-based physical education programs.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest in this research.

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