



Physical Fitness Profile of Junior High School Students: Evidence from Indonesian Physical Fitness Test (TKJI) Assessment

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Abstract. This study aims to evaluate the physical fitness profile of seventh-grade students at Al-Ulum Private Junior High School during the 2023/2024 academic year within the context of Physical Education (PJOK) learning. A quantitative descriptive design employing a survey method with standardized test-based measurements was adopted. The sample consisted of 30 students selected through simple random sampling. Physical fitness was assessed using the Indonesian Physical Fitness Test (Tes Kebugaran Jasmani Indonesia/TKJI) for ages 13–15, which includes five components: 50-meter sprint (speed), hanging body lift (upper body strength), 60-second sit-up (muscular endurance), vertical jump (explosive power), and middle-distance running (800 m for females and 1000 m for males) to measure cardiorespiratory endurance. The findings indicate that most students demonstrated a moderate level of physical fitness (70%), followed by a small proportion in the good category (10%), while 20% were classified as having low fitness levels. No participants were categorized as very high or very low. These results suggest that although students exhibit adequate baseline fitness, there remains substantial room for improvement, particularly in components associated with endurance and muscular strength. From a sport science perspective, moderate fitness levels among adolescents are often associated with insufficient physical activity intensity and frequency during structured school programs [1], [2]. Previous studies highlight that optimized physical education interventions significantly enhance cardiovascular fitness and overall physical performance in school-aged populations [3], [4]. Therefore, it is recommended that PJOK learning be reinforced through structured, progressive, and evidence-based training models to improve students' physical fitness outcomes. In conclusion, the overall fitness level of the observed cohort falls within the moderate category, emphasizing the need for pedagogical and programmatic enhancements in school-based physical education to support improved health and performance outcomes.

Keywords: Physical fitness assessment; Youth fitness; TKJI; Exercise physiology; Motor performance; Health-related fitness; School intervention.

1 Introduction

Physical education constitutes a fundamental component of holistic education, aiming not only to enhance students' physical fitness but also to foster motor competence, cognitive development, social interaction, and healthy lifestyle behaviors. Through systematically designed physical activities, physical education (PJOK) contributes to the development of well-rounded individuals aligned with national educational objectives [1], [2]. Within this framework, physical fitness is conceptualized as an individual's capacity to perform daily activities efficiently without excessive fatigue, while maintaining sufficient energy reserves for leisure and unforeseen demands [3], [4]. This multidimensional construct reflects both health status and functional performance, making it a critical indicator in adolescent development.

In school settings, physical fitness is primarily cultivated through structured physical education programs that emphasize "learning to move" and "learning through movement." These approaches are essential for improving physiological functions, particularly cardiorespiratory endurance, muscular strength, and motor coordination [5]. Empirical evidence indicates that well-designed school-based physical activity programs significantly contribute to improved health-related fitness and academic engagement among adolescents [6]. Therefore, regular assessment of students' physical fitness is necessary to monitor developmental progress and to inform evidence-based instructional strategies.

Physical fitness is influenced by a combination of internal and external factors. Internal determinants include age, sex, genetic predisposition, and biological maturation, while external factors encompass physical activity levels, environmental conditions, nutritional status, and lifestyle behaviors such as sedentary habits and screen time [7]. The principles of exercise training—such as overload and specificity—play a crucial role in enhancing physical fitness components, including muscular strength, endurance, speed, agility, balance, and coordination [8]. These components are commonly categorized into health-related fitness (e.g., endurance, strength, body composition) and skill-related fitness (e.g., speed, agility, power), both of which are essential for optimal student performance and well-being.

However, recent global trends indicate a decline in physical activity levels among adolescents, particularly following the COVID-19 pandemic. Restrictions on mobility and the shift to online learning have contributed to increased sedentary behavior and reduced opportunities for physical engagement [9], [10]. Studies have reported that prolonged screen time and decreased participation in physical activities are associated with reduced physical fitness and increased risk of overweight and obesity among school-aged children [11]. This phenomenon is further exacerbated by environmental factors, such as limited access to recreational spaces and inadequate physical activity support systems [12].

Given these challenges, there is an urgent need to evaluate students' physical fitness levels within the school context to provide accurate baseline data for intervention planning. Specifically, assessing fitness profiles using standardized instruments such as the Indonesian Physical Fitness Test (TKJI) enables educators to identify strengths and deficiencies across fitness components. Therefore, this study aims to analyze the physical fitness levels of seventh-grade students at Al-Ulum Private Junior High School as a basis for improving physical education practices and promoting active lifestyles among adolescents.

2 Methods

2.1 Research Design

This study employed a quantitative descriptive design using a survey approach combined with standardized physical fitness testing. Descriptive research aims to systematically describe existing phenomena without manipulating variables, allowing for the objective profiling of participants' characteristics [1]. In this context, the study focused on assessing the physical fitness levels of junior high school students based on established measurement standards.

The population comprised all seventh-grade students at Al-Ulum Private Junior High School during the 2023/2024 academic year. In line with sampling theory, the population represents a set of individuals sharing defined characteristics relevant to the research objectives [2].

Data were collected using the Indonesian Physical Fitness Test (Tes Kebugaran Jasmani Indonesia/TKJI) for adolescents aged 13–15 years, developed by the Ministry of National Education. This standardized instrument evaluates multiple components of physical fitness, including speed, muscular strength, muscular endurance, explosive power, and cardiorespiratory endurance. Each participant completed five test items administered sequentially with a maximum rest interval of three minutes between tests to minimize fatigue bias [3]. The test battery included: (1) 50-meter sprint, (2) flexed-arm hang, (3) 60-second sit-up test, (4) vertical jump, and (5) middle-distance running (1000 m for males and 800 m for females).

Data analysis was conducted using descriptive statistical techniques, including frequency distributions and percentage calculations. All computations were performed using IBM SPSS Statistics version 23, ensuring accuracy and consistency in data processing. The results were subsequently presented in tabular and graphical formats to facilitate interpretation.

2.2 Participants

The sample consisted of 30 seventh-grade students, selected through a simple random sampling technique from a total of seven classes. Random sampling was employed to ensure representativeness and to reduce selection bias, thereby enhancing the generalizability of the findings within the study context [4].

The selection of seventh-grade students was based on developmental considerations, as early adolescence represents a critical period for physical fitness development, influenced by growth, maturation, and behavioral factors. Evaluating this cohort provides valuable baseline data for designing targeted physical education interventions aimed at improving fitness levels and supporting long-term health outcomes [5].

2.3 Instruments and Measurement Procedures

Physical fitness was assessed using the TKJI (2010) standardized test protocol for adolescents aged 13–15 years. This instrument has been widely used in Indonesian educational settings and demonstrates acceptable levels of validity and reliability for measuring health-related fitness components [6].

Each test item was scored according to normative performance standards differentiated by sex. The scoring system ranges from 1 (very poor) to 5 (very good) for each component. The aggregate score across all test items was then converted into a composite fitness classification based on national standards.

Table 1. TKJI Performance Scoring Criteria for Adolescents (3-15 Years)

Score	50 m Sprint (sec)	Flexed Arm Hang (sec)	Sit-Ups (reps)	Vertical Jump (cm)	Middle-Dis- tance Run
5	Highest per- formance	Highest perfor- mance	Highest per- formance	Highest per- formance	Fastest time
1	Lowest per- formance	Lowest perfor- mance	Lowest per- formance	Lowest per- formance	Slowest time

Note: Detailed sex-specific norms follow the official TKJI (2010) guidelines.

GIRLS					
Score	50 m Run (sec)	Flexed Arm Hang (sec)	Sit-Ups (reps)	Vertical Jump (cm)	800 m Run (min:sec)
5	≤ 7.7	≥ 41	≥ 28	≥ 50	≤ 3:06
4	7.8 – 8.7	22 – 40	19 – 27	39 – 49	3:07 – 3:55
3	8.8 – 9.9	10 – 21	9 – 18	30 – 38	3:56 – 4:58
2	10.0 – 11.9	3 – 9	3 – 8	21 – 29	4:59 – 6:40
1	≥ 12.0	0 – 2	0 – 2	≤ 20	≥ 6:41
BOYS					
Score	50 m Run (sec)	Flexed Arm Hang (sec)	Sit-Ups (reps)	Vertical Jump (cm)	800 m Run (min:sec)
5	≤ 6.7	≥ 16	≥ 38	≥ 66	≤ 3:04
4	6.8 – 7.6	11 – 15	28 – 37	55 – 65	3:05 – 3:53
3	7.7 – 8.7	6 – 10	19 – 27	42 – 52	3:54 – 4:46
2	8.8 – 10.0	2 – 5	8 – 18	31 – 41	4:47 – 6:04
1	≥ 10.4	0 – 1	0 – 7	≤ 30	≥ 6:05

Physical fitness levels are determined by reviewing the results of the Indonesian Physical Fitness Test. The physical fitness test results are then converted into the following:

Table 2. Classification of Physical Fitness Levels

No	Score	Classification
1	22-25	Very Good
2	18-21	Good
3	14-17	Fair
4	10-13	Poor
5	5-9	Very Poor

The use of composite scoring allows for a holistic evaluation of students' physical fitness profiles, integrating multiple physiological components into a single classification. Such multidimensional assessment is consistent with contemporary sport science approaches that emphasize the interaction between strength, endurance, and motor performance [7].

3 Results and Discussion

3.1 Results

Physical fitness data were obtained through the Indonesian Physical Fitness Test (TKJI), which includes five components: 50 m sprint (speed), flexed-arm hang (upper body strength), 60-second sit-up (muscular endurance), vertical jump (explosive power), and middle-distance running (cardiorespiratory endurance). The results of these five test components were aggregated and classified into five categories: very good, good, fair, poor, and very poor.

The distribution of students' physical fitness levels is presented in Table 3.

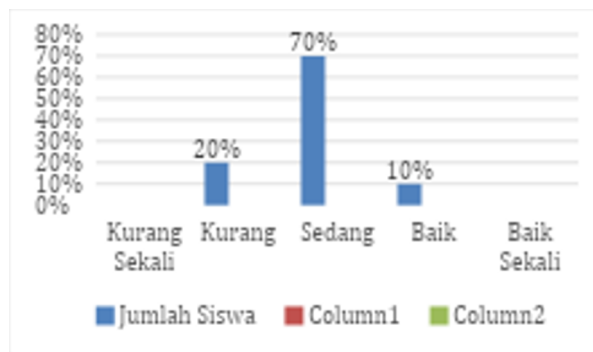
Table 3. Research Findings

No.	Score	Classification	Frequency	Percentage
1.	22-25	Very Good	0	0%
2.	18-21	Good	3	10%
3.	14-17	Fair	21	70%
4.	10-13	Poor	6	20%
5.	05-09	Very Poor	0	0%
Total			30	100%

The findings indicate that the majority of students (70%) fall within the fair (moderate) fitness category. A smaller proportion (10%) achieved a good fitness level, while 20% were classified as poor. Notably, no participants were categorized as either very good or very poor. These results demonstrate that the overall physical fitness profile of the sample is concentrated in the middle range, suggesting adequate but suboptimal physical conditioning.

From table 3 above, it shows that of the 30 students of class VII VII of Al-Ulum Private Middle School, 0% or no students have a very good classification, 10% or 3 students have a good classification, 70% or 21 students have a moderate classification, 20% or 6 students have a less classification and 0% or no students have a very less classification.

The results of these measurements can be seen in the bar chart below:



3.2 Discussion

The present findings reveal that most students exhibit moderate levels of physical fitness, with limited representation in the higher performance categories. From a sport science perspective, this distribution reflects a non-optimal physical activity stimulus, where students engage in sufficient activity to maintain baseline fitness but lack the intensity and frequency required for higher-level physiological adaptation [13].

The predominance of moderate fitness levels can be attributed to several interrelated factors. Observational evidence during PJOK sessions indicated that students often demonstrated low exercise tolerance and early onset of fatigue, which are commonly associated with insufficient cardiorespiratory conditioning and muscular endurance [14]. Furthermore, the transition between online and limited face-to-face learning environments during and after the COVID-19 pandemic has significantly influenced students' physical activity patterns. Prolonged exposure to sedentary behaviors, particularly increased screen time, has been widely reported to negatively affect adolescent fitness levels [15].

These results are consistent with previous empirical studies. Natal [16] reported that 70% of junior high school students were categorized in the moderate fitness level during the pandemic period, while only a small proportion reached the good category. Sim-

ilarly, Rizal [17] found that a majority of students were in the poor-to-moderate categories during the post-pandemic transition, indicating a decline in physical fitness due to reduced physical engagement. Such trends highlight the long-term impact of disrupted physical education practices and limited movement opportunities.

In addition, the relationship between physical fitness and academic performance has been well documented. Higher levels of physical fitness are positively associated with improved cognitive function, concentration, and learning outcomes [18]. Therefore, the moderate fitness profile observed in this study suggests that students may not yet be achieving their optimal academic and physical potential.

From an applied perspective, these findings provide important implications for physical education (PJOK) curriculum development. Schools and educators should implement structured, progressive, and evidence-based physical activity programs that emphasize the principles of overload, specificity, and regularity to enhance students' fitness levels [19]. Interventions may include increasing the frequency and intensity of physical activity during lessons, promoting extracurricular sports participation, and encouraging active lifestyles beyond the school environment.

Moreover, a hybrid learning context (combining face-to-face and online modalities) requires innovative pedagogical approaches to ensure sustained physical engagement. The integration of technology-assisted physical activity programs, home-based exercise assignments, and continuous fitness monitoring may serve as effective strategies to counteract sedentary tendencies [20].

In conclusion, the dominance of moderate physical fitness levels among students indicates a need for targeted intervention and systematic improvement in physical education practices. Strengthening school-based physical activity programs and fostering active behavior both inside and outside the classroom are essential to improving students' overall fitness and long-term health outcomes.

4 Conclusion

This study concludes that the overall physical fitness level of seventh-grade students at Al-Ulum Private Junior High School during the 2023/2024 academic year is predominantly categorized as moderate (fair). Empirical findings indicate that 70% of students fall within the moderate category, while 10% demonstrate good fitness levels and 20% are classified as having low fitness. Notably, no participants achieved either the very good or very poor categories. These results suggest that students possess an adequate baseline of physical fitness; however, their condition has not yet reached an optimal level required for enhanced physical performance and health outcomes.

From a sport science perspective, a predominance of moderate fitness levels reflects insufficient training stimulus in terms of intensity, frequency, and progression, which are essential for physiological adaptation, particularly in cardiorespiratory endurance and muscular strength [1], [2]. This condition may be influenced by reduced physical activity patterns and increased sedentary behavior, especially in the context of post-pandemic learning environments [3].

The findings underscore the importance of strengthening school-based physical education (PJOK) programs through structured, progressive, and evidence-based approaches. Enhancing the quality and quantity of physical activity within and beyond the classroom is critical to improving students' fitness profiles and supporting their overall development. Therefore, systematic monitoring using standardized instruments such as the TKJI, combined with targeted intervention strategies, is recommended to promote sustainable improvements in adolescent physical fitness [4].

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