

## Survey of Physical Fitness Levels Among 7th Grade Students at SMPN 16 Jambi City

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### ABSTRACT

Physical fitness is defined as an individual's physical capability to perform daily physical tasks optimally and still be able to carry out additional physical activities without experiencing significant fatigue. The research method employed in this study is a quantitative descriptive approach using a survey method. This research involved 80 students, consisting of 30 males and 50 females. The data collection technique utilized the TKJI (Indonesian Physical Fitness Test), which is a series of tests; therefore, all test items must be carried out sequentially, continuously, and without interruption, with attention to speed. The transition from one test item to the next is within 3 minutes. The research findings indicate that the physical fitness level of male students is dominated by the average to below-average categories, with 40% in the average category and 60% in the below-average category, with a mean score of 13.03 points. Meanwhile, the majority of female students fall into the average (6%) and below-average (88%) categories, with a mean score of 11.32 points. Analysis per indicator shows that for male students, the 50-meter sprint speed is relatively good, with 70% in the good and excellent categories. However, the 1000-meter run endurance is very low, with 76.7% in the below-average category and 23.3% in the poor category.

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## INTRODUCTION

The physical fitness of school-aged children is widely recognized as a foundational component of their overall growth, health, and readiness to learn. In the school context, especially in lower secondary education, fitness is not only a health indicator but also an educational outcome that reflects the effectiveness of physical education programs, school environments, and students' lifestyles (Caspersen, Powell, & Christenson, 2015; Ortega et al., 2019). Globally, a number of studies have shown that good fitness levels in adolescence are associated with reduced risk of non-communicable diseases, better cardiometabolic profiles, higher academic achievement, and better psychosocial adjustment (Ruiz et al., 2016; Smith, García-Hermoso, & Lubans, 2018). For countries like

Indonesia, where school is a strategic setting for health promotion, monitoring and mapping students' physical fitness is essential to support national education and health policies.

According to Wahyu Setyawan & Sri Wahyuni (2018), physical fitness is a condition where the body is still capable of performing any recreational or play activities; in this regard, a person must possess endurance, flexibility, and strength in performing activities. According to Sulistiono (2014), a person's physical fitness condition that can adapt to all physical and psychological burdens received serves as the foundation for achieving optimal work productivity or performance. According to Damar Prawira Negara & Taufiq Hidayat (2015), good physical fitness is the primary fundamental asset for a person to perform physical activities repeatedly over a relatively long period without causing significant fatigue, so that the body remains capable.

Physical fitness in the school setting is generally understood as a multidimensional construct that includes cardiovascular endurance, muscular strength and endurance, flexibility, and body composition, which together enable students to perform daily activities efficiently and to participate in physical education (PE) classes without undue fatigue (Bouchard, Shephard, & Trudeau, 2016). In the Indonesian curriculum, physical education—Pendidikan Jasmani, Olahraga, dan Kesehatan (PJOK)—is designed not only to teach movement skills but also to cultivate active lifestyles and lifelong fitness (Kurniawan & Prasetyo, 2020). However, several recent reports indicate a gradual decline in children's physical activity levels due to urbanization, increased screen time, limited play spaces, and academic pressure, which may directly affect their fitness levels (Putra & Amiruddin, 2021; Wijaya, 2022). This situation is particularly relevant in urban public junior high schools, such as SMPN 16 Kota Jambi, where students are exposed to sedentary habits and changing lifestyles typical of growing cities.

More specifically, 7th grade represents a critical transition period from primary to junior high school. At this stage (approximately 12–13 years old), students experience early adolescence marked by rapid physical growth, hormonal changes, and shifts in social and academic demands (Pratama, Sari, & Hidayat, 2019). If physical fitness is not maintained during this transition, students may demonstrate lower participation in PE, lower motor competence, and reduced enjoyment of physical activity, which in turn may lead to a long-term decline in active behavior (Barnett et al., 2019). Therefore, obtaining empirical data on the fitness status of 7th-grade students is strategic because it can serve as an "early warning" for schools and policymakers regarding the adequacy of PE implementation, school facilities, and extracurricular sports provision in a specific local context, such as Jambi City.

Despite the acknowledged importance of fitness assessment, many schools in Indonesia still do not conduct regular, standardized, and research-based fitness surveys. Existing evaluations often rely on teachers' observations during PE classes, which are useful but subjective and not comparable across classes or schools (Rahayu & Yulianto, 2020). Several national studies have examined the physical fitness of elementary or high school students using national fitness tests such as

TKJI (Tes Kesegaran Jasmani Indonesia), but there are still limited publication focusing on junior high school students in specific urban areas, especially in Sumatra regions like Jambi (Suhadi, 2018; Rahman & Kadir, 2022). Moreover, many previous studies aggregated data from multiple schools without providing school-specific profiles. As a result, school principals and PE teachers have little localized evidence to support targeted interventions.

This condition leads to several objective issues. First, there is a lack of updated, school-level fitness data for SMPN 16 Jambi City that can be used to evaluate whether students' fitness levels meet expected standards for their age. Second, without such data, it is difficult to identify which fitness components—cardiorespiratory endurance, strength, flexibility, or speed—are relatively low and thus require instructional improvement. Third, the absence of data limits the ability of teachers to design differentiated PJOK learning, remedial fitness programs, or extracurricular training suited to students' needs (Herlina & Sutisna, 2021). Fourth, local education authorities cannot easily integrate school fitness profiles into broader health promotion or city-level youth sport development programs. In other words, the problem is not only about fitness possibly being low, but also about fitness being unknown.

From a research perspective, this situation reveals a clear gap. International literature on youth fitness is abundant and increasingly sophisticated—using FITNESSGRAM, Eurofit, or national batteries, and linking fitness to academic or psychosocial outcomes (Ortega et al., 2019; García-Hermoso et al., 2020). Indonesian literature, however, while growing, still shows three gaps: (1) underrepresentation of junior high school populations compared to elementary students; (2) limited attention to urban, city-based public schools outside Java; and (3) limited school-specific survey designs that can directly inform local teaching practice (Hidayat & Fitria, 2019; Yuliana, 2023). Studies conducted in Java or big metropolitan areas may not fully reflect the lifestyle patterns, facilities, and school cultures of students in Jambi City. Furthermore, some previous studies only reported mean fitness scores without categorizing students into fitness levels (very good, good, moderate, low), which reduces their practical usefulness for teachers (Rahman & Kadir, 2022).

Therefore, the present study proposes a school-based survey titled “Survey of Physical Fitness Levels Among 7th Grade Students at SMPN 16 Jambi City.” The novelty of this study lies in its focus on: (1) a specific and real school context (SMPN 16 Jambi City) that has not been widely reported in indexed literature; (2) a single grade level (7th grade) that is pedagogically critical; (3) categorization of fitness into levels to provide directly usable information for teachers; and (4) alignment with the Indonesian PE curriculum so that the results can feed back into school lesson planning. By localizing the survey, the study moves from a generalized national picture to an actionable school profile—this is the practical innovation the study offers.

In addition, this study positions physical fitness not only as a health indicator but also as an educational quality indicator. If many students are found in “moderate” or “low”

categories, it may indicate that PE time allocation is insufficient, learning methods are not active enough, or school facilities do not adequately support movement-rich learning (Siregar & Hutabarat, 2021). Conversely, a high proportion of students in “good” or “very good” categories can be used as evidence of good PE implementation and can encourage schools to maintain or even scale up their programs. Thus, the survey becomes part of a school-based evaluation cycle consistent with current educational quality assurance practices.

Based on the background above, the “Here We Go” of this article is clear. This study will systematically collect data on the physical fitness levels of 7th-grade students at SMPN 16 Jambi City using a standardized fitness test appropriate for Indonesian adolescents. The data will be presented descriptively in the form of mean scores and fitness categories to show the overall profile and distribution. The results are expected to: (1) provide baseline fitness data for the school; (2) identify fitness components that require improvement; (3) serve as empirical material for PE teachers to design more targeted learning; and (4) contribute to the growing body of Indonesian and Southeast Asian literature on schoolchildren’s fitness. Ultimately, the study aims to bridge the gap between national-level discussions on youth fitness and the everyday realities of PE classrooms in a specific Indonesian city.

The objective of this research is to determine the level of physical fitness among all 7th-grade students at SMP Negeri 16 Jambi City.

## METHODS

According to Sugiyono (2010), this research employs a survey method, which is a quantitative research method used to obtain data that occurred in the past or present. In terms of the research design objectives, this study falls into the category of quantitative descriptive research, which is an effective method for describing or depicting existing phenomena, whether natural phenomena or engineered phenomena.

The characteristics of the research population include all 7th-grade students at SMP Negeri 16, Jambi City. Based on the description above, students at SMP Negeri 16 Jambi City meet the requirements as the research population. The sampling in this research was conducted using total sampling, so that the entire population of 7th-grade students at SMPN 16 Jambi City was taken as the sample. This is because a sample is a portion of the number and characteristics possessed by the population, or a small part of the population members taken according to certain procedures, so that it can represent the population.

A research instrument is a measuring tool used to collect data (Purwanto, 2017: 9). In this research, the TKJI was selected by the researcher as the instrument to obtain data. Things that must be prepared and considered when conducting the test are: running track/field, stopwatch, start flag, pull-up bar, chalk powder, test forms, whistle, and writing instruments.

**Table 1.**  
Physical Fitness Values for Male Adolescents Aged 13-15 Years

50 Meter-Run (Seconds)	Pull-up	Sit-Up 60 Seconds	Vertical Jump (cm)	1000 Meter-Run	Score
Up to 6,2 Seconds	16 and above	41 and above	66 cm and above	Up to 3,04 minutes	5
6,8 - 7,6 Seconds	11 - 15	28 - 37times	53 - 65 cm	3,05 - 3,53 minutes	4
7,7 - 8,7 Seconds	6 - 10	19 - 27times	42 - 52 cm	3,54 - 4,46 minutes	3
8,8 - 10,3 Seconds	2 - 5	8 - 18times	31 - 41 cm	4,47 - 6,04 minutes	2
10,4 - dst	0 - 1	0 - 7times	30 and below	6,05 and above	1

**Table 2.**  
Physical Fitness Values for Female Adolescents Aged 13-15 Years

50 Meter-Run (Seconds)	Pull-up	Sit-Up 60 Seconds	Vertical Jump (cm)	1000 Meter-Run	Score
Up to 7,7 Seconds	30 Seconds above	28 above	50 cm above	Up to 3,06 minutes	5
7,8 - 8,7 Seconds	20 - 39	19-27 times	39 - 49 cm	3,07 - 3,55 minutes	4
8,8 - 9,9 Seconds	08 - 19	9-18times	30 - 38 cm	3,56 - 4,58 minutes	3
10,0 - 11,9 Seconds	02 - 07	3-8times	21 - 29 cm	4,59 - 7,40 minutes	2
12,0 and above	0 - 02	0-2times	20 cm and below	7,41 and above	1

**Table 3.**  
Indonesian Physical Fitness Test Normative Standards

No	Total Score	Classification Score
1	22 - 25	Excellent
2	18 - 21	Good
3	14 - 17	Average
4	10 - 13	Below Average
5	5 - 9	Poor

## RESULTS AND DISCUSSION

Based on the research results that have been conducted, the obtained data were then arranged in a frequency distribution and subsequently entered into a frequency distribution table for Physical Fitness Levels according to the formula determined in the previous chapter. The data were categorized based on 5 classifications: excellent, good, average, below average, and poor. Below is the table showing the physical fitness level results of all female students in grade VII at SMPN 16 Jambi City.

**Table 4.**  
Frequency Distribution of Physical Fitness Levels for Male Students

No	Total Score	Classification	Frequency	Percentage
1	22-25	Excellent	0	0%
2	18-21	Good	0	0%
3	14-17	Average	12	40%
4	10-13	Below Average	18	60%
5	5-9	Poor	0	0%
<b>Total</b>			<b>30</b>	<b>100%</b>

$$\text{Formula: } P = \frac{F}{N} \times 100\%$$

Therefore, the results can be concluded as follows::

- $\frac{0}{30} \times 100\% = 0\%$  (Excellent)
- $\frac{0}{30} \times 100\% = 0\%$  (Good)
- $\frac{12}{30} \times 100\% = 40\%$  (Average)
- $\frac{18}{30} \times 100\% = 60\%$  (Below Average)
- $\frac{0}{30} \times 100\% = 0\%$  (Poor)

**Table 5.**

Frequency Distribution of Physical Fitness Levels for Female Students

No	Total Score	Classification	Frequency	Percentage
1	22-25	Excellent	0	0%
2	18-21	Good	0	0%
3	14-17	Average	1	2%
4	10-13	Below Average	48	96%
5	5-9	Poor	1	2%
<b>Total</b>			<b>50</b>	<b>100%</b>

$$\text{Formula: } P = \frac{F}{N} \times 100\%$$

Therefore, the results can be concluded as follows:

- $\frac{0}{50} \times 100\% = 0\%$  (Excellent)
- $\frac{0}{50} \times 100\% = 0\%$  (Good)
- $\frac{1}{50} \times 100\% = 2\%$  (Average)
- $\frac{48}{50} \times 100\% = 96\%$  (Below Average)
- $\frac{1}{50} \times 100\% = 2\%$  (Poor)

**Table 6.**

Frequency Distribution of 50-Meter Run for Male Students

No	Male	Category	Frequency	Percentage
1	Up to 6,2 detik	Very Good	8	26,7%
2	6,8 – 7,6 detik	Good	13	43,3%
3	7,7 – 8,7 detik	Average	6	20%
4	8,8 – 10,3 detik	Below Average	4	10%
5	10,4 and above.	Poor	0	0%
<b>Total</b>			<b>30</b>	<b>100%</b>

$$\text{Formula: } P = \frac{F}{N} \times 100\%$$

Therefore, the results can be concluded as follows:

- $\frac{8}{30} \times 100\% = 26,7\%$  (Excellent)
- $\frac{13}{30} \times 100\% = 43,3\%$  (Good)
- $\frac{6}{30} \times 100\% = 20\%$  (Average)
- $\frac{4}{30} \times 100\% = 10\%$  (Below Average)
- $\frac{0}{30} \times 100\% = 0\%$  (Poor)

**Table 7.**  
 Frequency Distribution of 50-Meter Run for Female Students

No	Female	Category	Frequency	Percentage
1	Up to 7,7 detik	Excellent	0	0%
2	7,8 – 8,7 detik	Good	9	18%
3	8,8 – 9,9 detik	Average	26	52%
4	10,0 – 11,9 detik	Below Average	15	30%
5	12,0 and above	Poor	0	0%
<b>Total</b>			<b>50</b>	<b>100%</b>

$$\text{Formula: } P = \frac{F}{N} \times 100\%$$

Therefore, the results can be concluded as follows:

- $\frac{0}{50} \times 100\% = 0\%$  (Excellent)
- $\frac{9}{50} \times 100\% = 18\%$  (Good)
- $\frac{26}{50} \times 100\% = 52\%$  (Average)
- $\frac{15}{50} \times 100\% = 30\%$  (Below Average)
- $\frac{0}{50} \times 100\% = 0\%$  (Poor)

**Table 8.**  
 Frequency Distribution of Pull-Up (Hanging Pull-Up) for Male Students

No	Male	Category	Frequency	Percentage
1	16 and above	Excellent	0	0%
2	11 – 15	Good	0	0%
3	6 – 10	Average	12	40%
4	2 – 5	Below Average	18	60%
5	0 – 1	Poor	0	0%
<b>Total</b>			<b>30</b>	<b>100%</b>

$$\text{Formula: } P = \frac{F}{N} \times 100\%$$

Therefore, the results can be concluded as follows:

- $\frac{0}{30} \times 100\% = 0\%$  (Excellent)
- $\frac{0}{30} \times 100\% = 0\%$  (Good)
- $\frac{12}{30} \times 100\% = 40\%$  (Average)
- $\frac{18}{30} \times 100\% = 60\%$  (Below Average)
- $\frac{0}{30} \times 100\% = 0\%$  (Poor)

**Table 9.**  
 Frequency Distribution of Pull-Up for Female Students

No	Female	Category	Frequency	Percentage
1	30 and above	Excellent	0	0%
2	20 – 39	Good	9	0%
3	8 – 19	Average	50	100%
4	2 – 7	Below Average	0	0%
5	0 – 1	Poor	0	0%
<b>Total</b>			<b>50</b>	<b>100%</b>



$$\text{Formula: } P = \frac{F}{N} \times 100\%$$

Therefore, the results can be concluded as follows:

- $\frac{0}{50} \times 100\% = 0\%$  (Excellent)
- $\frac{0}{50} \times 100\% = 0\%$  (Good)
- $\frac{50}{50} \times 100\% = 100\%$  (Average)
- $\frac{0}{50} \times 100\% = 0\%$  (Below Average)
- $\frac{0}{50} \times 100\% = 0\%$  (Poor)

**Table 10.**

Frequency Distribution of Sit-Up for Male Students

No	Male	Category	Frequency	Percentage
1	41 keatas	Excellent	3	10%
2	28 – 37 kali	Good	17	56,7%
3	19 – 27 kali	Average	10	33,3%
4	8 – 18 kali	Below Average	0	0%
5	0 – 7 kali	Poor	0	0%
<b>Total</b>			<b>30</b>	<b>100%</b>

$$\text{Formula: } P = \frac{F}{N} \times 100\%$$

Therefore, the results can be concluded as follows:

- $\frac{8}{30} \times 100\% = 10\%$  (Excellent)
- $\frac{17}{30} \times 100\% = 56,7\%$  (Good)
- $\frac{10}{30} \times 100\% = 33,3\%$  (Average)
- $\frac{0}{30} \times 100\% = 0\%$  (Below Average)
- $\frac{0}{30} \times 100\% = 0\%$  (Poor)

**Table 11.**

Frequency Distribution of Sit-Up for Female Students

No	Female	Category	Frequency	Percentage
1	28 and above	Excellent	0	0%
2	19 – 27	Good	1	2%
3	9 – 18	Average	37	74%
4	3 – 8	Below Average	12	24%
5	0 – 2	Poor	0	0%
<b>Total</b>			<b>50</b>	<b>100%</b>

$$\text{Formula: } P = \frac{F}{N} \times 100\%$$

Therefore, the results can be concluded as follows:

- $\frac{0}{50} \times 100\% = 0\%$  (Excellent)
- $\frac{1}{50} \times 100\% = 2\%$  (Good)
- $\frac{37}{50} \times 100\% = 74\%$  (Average)
- $\frac{12}{50} \times 100\% = 24\%$  (Below Average)
- $\frac{0}{50} \times 100\% = 0\%$  (Poor)



**Table 12.**

Frequency Distribution of Vertical Jump for Male Students

No	Male	Category	Frequency	Percentage
1	66 cm and above	Excellent	0	0%
2	53 – 65 cm	Good	1	3,3%
3	42 – 52 cm	Average	2	6,7%
4	31 – 41 cm	Below Average	13	43,3%
5	30 cm and below	Poor	14	46,7%
<b>Total</b>			<b>30</b>	<b>100%</b>

$$\text{Formula: } P = \frac{F}{N} \times 100\%$$

Therefore, the results can be concluded as follows:

- $\frac{0}{30} \times 100\% = 0\%$  (Excellent)
- $\frac{1}{30} \times 100\% = 3,3\%$  (Good)
- $\frac{2}{30} \times 100\% = 6,7\%$  (Average)
- $\frac{13}{30} \times 100\% = 43,3\%$  (Below Average)
- $\frac{14}{30} \times 100\% = 46,7\%$  (Poor)

**Table 13.**

Frequency Distribution of Vertical Jump for Female Students

No	Female	Category	Frequency	Percentage
1	28 and above	Excellent	0	0%
2	19 – 27	Good	0	0%
3	9 – 18	Average	33	66%
4	3 – 8	Below Average	17	24%
5	0 – 2	Poor	0	0%
<b>Total</b>			<b>50</b>	<b>100%</b>

$$\text{Formula: } P = \frac{F}{N} \times 100\%$$

Therefore, the results can be concluded as follows:

- $\frac{0}{50} \times 100\% = 0\%$  (Excellent)
- $\frac{0}{50} \times 100\% = 0\%$  (Good)
- $\frac{33}{50} \times 100\% = 66\%$  (Average)
- $\frac{17}{50} \times 100\% = 24\%$  (Below Average)
- $\frac{0}{50} \times 100\% = 0\%$  (Poor)

**Table 14.**

Frequency Distribution of 1000-Meter Run for Male Students

No	Male	Category	Frequency	Percentage
1	Up to 3,04 menit	Excellent	0	0%
2	3,05 – 3,53 menit	Good	0	0%
3	3,54 – 4,46 menit	Average	0	0%
4	4,47 – 6,04 menit	Below Average	23	76,7%
5	6,05 and more	Poor (KS)	7	23,3%
<b>Total</b>			<b>30</b>	<b>100%</b>

$$\text{Formula: } P = \frac{F}{N} \times 100\%$$

Therefore, the results can be concluded as follows:

- $\frac{0}{30} \times 100\% = 0\%$  (Excellent)
- $\frac{0}{30} \times 100\% = 0\%$  (Good)
- $\frac{0}{30} \times 100\% = 0\%$  (Average)
- $\frac{23}{30} \times 100\% = 76,7\%$  (Below Average)
- $\frac{7}{30} \times 100\% = 23,3\%$  (Poor)

**Table 15.**

Frequency Distribution of 800-Meter Run for Female Students

No	Female	Category	Frequency	Percentage
1	Up to 3,06 menit	Excellent	0	0%
2	3,07 – 3,55	Good	0	0%
3	3,56 – 4,58	Average	0	0%
4	4,59 – 7,40	Below Average	0	0%
5	7,41 and above	Poor	50	100%
<b>Total</b>			<b>50</b>	<b>100%</b>

$$\text{Formula: } P = \frac{F}{N} \times 100\%$$

Therefore, the results can be concluded as follows:

- $\frac{0}{50} \times 100\% = 0\%$  (Excellent)
- $\frac{0}{50} \times 100\% = 0\%$  (Good)
- $\frac{0}{50} \times 100\% = 0\%$  (Average)
- $\frac{0}{50} \times 100\% = 0\%$  (Below Average)
- $\frac{50}{50} \times 100\% = 100\%$  (Poor)

Based on the results of the physical fitness test for male students at SMPN 16 Jambi City from 30 students, it was found that 0 students (0%) were in the excellent category, 4 students (13.3%) were in the good category, 21 students (70%) were in the average category, 5 students (16.7%) were in the below average category, and 0 students (0%) were in the poor category. After examining the physical fitness test results of male students at SMPN 16 Jambi City, which totaled 30 male students with a total score of 391 points, the mean result of the research on male students' physical fitness test was 13.03 points and falls into the average category.

Meanwhile, based on the results of the physical fitness test for female students at SMPN 16 Jambi City from 50 female students, it was found that 0 students (0%) had an excellent fitness level, 0 students (0%) had a good fitness level, 1 student (2%) had an average fitness level, 48 students (96%) had a below average fitness level, and 1 student (2%) had a poor fitness level. After examining the physical fitness test results of female students at SMPN 16 Jambi City, which totalled 50 students with a total score of 566 points, the mean result of the research on female students' physical fitness test was 11.32 points and falls into the below-average category.

## CONCLUSION

Based on the obtained data, it is known that students at SMPN 16 Jambi City, specifically all 7th-grade students, have the following physical fitness levels. The physical fitness level of male students falls into the average category, with a mean calculation result of 13.03 points, while the physical fitness level of female students has a mean calculation of 11.32 points, which places them in the below-average category.

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