



Physical condition levels of futsal extracurricular students at YLPI Perhentian Marpoyan Junior High School

Research Article

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Abstract.

- Background** The background of this research lies in the need to understand the physical condition of students participating in futsal extracurricular activities, as optimal physical fitness is essential for supporting performance in a fast-paced sport such as futsal. Evaluating students' physical condition is necessary to identify their strengths and weaknesses across several fitness components relevant to gameplay.
- Objectives** The objective of this study was to determine the overall level of physical condition among futsal extracurricular students at YLPI Perhentian Marpoyan Junior High School.
- Methods** This research employed a descriptive quantitative design. The participants consisted of 15 futsal extracurricular students selected through a total sampling technique. Data were collected through a series of physical fitness tests, including a 30-meter sprint test to measure speed, a shuttle run test to assess agility, a standing long jump test to measure leg explosive power, a wall squat test to measure muscular endurance, and a 15-minute run test to evaluate cardiorespiratory endurance. To get an overall classification, the test results were put into standardized scoring categories and then analyzed.
- Results** The results indicated that the students achieved an average final physical condition score of 2.5, rounded to 3, which is categorized as Fair. These findings indicate that although students possess basic physical abilities, their overall physical condition remains insufficient to meet the demands of futsal performance.
- Conclusion** The study concludes that students require improvement through structured and consistent training, which points to the importance of enhanced fitness development programs within the extracurricular futsal setting.

Keywords: futsal, physical condition level, physical fitness.

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INTRODUCTION

Physical education and sports are integral components of the school curriculum that aim to improve students' physical health, motor skills, and overall well-being through structured educational activities (Lee & Gao, 2020; Mandigo et al., 2009; Suryadi et al., 2024). Achieving the goals of physical education requires qualified educators and well-designed learning programs that align with national curricular standards. Sports, as regulated in the Indonesian Presidential Regulation No. 86 of 2021 on the Grand Design of National Sports, encompass all aspects related to athletic development, including regulation, education, training, coaching, and evaluation conducted systematically and sustainably (Kusmiyati Kusmiyati et al., 2023). Sports activities are important for developing high-quality human resources because they help with physical fitness, mental health, and character development. In the school context, physical education is implemented through intramural learning as well as extracurricular programs such as futsal. Sports in education play a vital role in fostering students' physical, mental, and social development, ultimately helping learners develop holistically in cognitive, affective, and psychomotor domains (Athaya et al., 2023; Mariati et al., 2024).

Physical condition is defined as the state of an individual's physical capacity before, during, and after exercise, involving both physiological and psychological components (Candra, 2024). It serves as a fundamental prerequisite for achieving optimal sports performance and must be developed according to the characteristics of each sport (Zikri & Yulianti, 2024). Physical ability is closely linked to the body's

efficiency in performing movements and plays a crucial role in supporting psychomotor skills (Nurdilla et al., 2020). Prior studies emphasize that physical fitness is not merely a supporting element but serves as the foundation for the development of technical, tactical, and strategic skills in sports (Candri & Gazali, 2023). Furthermore, physical condition encompasses various components; strength, endurance, speed, flexibility, agility, coordination, balance, accuracy, and reaction (Prasetya & Sasmarianto, 2023; Muspita et al., 2018).

These components must be developed holistically to meet the demands of sport-specific performance, especially in futsal, which requires dominant components such as endurance, explosive power, speed, agility, and strength (Sajoto, 2003 as cited in D. W. D. Saputra & Kusuma, 2019). Additional literature notes that physical fitness is influenced by internal factors such as age, gender, and innate abilities, as well as external factors such as nutrition, rest, environment, and training quality (Maliki in Prima & Kartiko, 2021; Galan in Prima & Kartiko, 2021). Extracurricular activities, as defined by Fatmawati & Kamarudin (2022), provide structured opportunities for students to enhance knowledge, skills, and character outside regular learning hours. These programs contribute significantly to students' development when supported by educators, parents, and coaches (Jatra et al., 2019; Gazali et al., 2019; Darmawan & Rahmadani, 2023). Futsal itself is a dynamic sport that requires players to master basic techniques such as passing, controlling, dribbling, shooting, and heading (R. N. Saputra et al., 2019), as well as to understand specific rules and strategies that distinguish futsal from conventional football (Siregar & Yani, 2023; Ade et al., 2020). Therefore, physical fitness and technical skills are essential for maintaining performance in the fast-paced and high-pressure environment characteristic of futsal.

Therefore, strengthening physical education within schools is crucial, as it facilitates systematic physical development, intelligence, and character formation among students. Futsal is a popular physical education activity that is often offered as an extracurricular activity at schools. Students of all ages enjoy it because it is fun and fast-paced (Abdullah & Abdullah, 2025). Extracurricular activities serve as additional educational platforms that allow students to explore and develop their interests, talents, and potentials under the supervision of qualified educators (Suniga et al., 2025). Futsal, created by Juan Carlos Ceriani, has evolved into a globally popular sport characterized by rapid tempo and intensive physical demands. The sport requires players to demonstrate strong physical fitness, including stamina, agility, strength, and speed, to maintain optimal performance. Observations in the field indicated that many students participating in the futsal extracurricular program became fatigued, struggled to chase the ball, found it difficult to maintain possession, and exhibited poor agility and muscular strength. This situation shows that students' physical health needs to be regularly checked and improved. This led to the creation of this study on the level of physical fitness among futsal extracurricular participants at YLPI Perhentian Marpoyan Junior High School.

Although numerous studies examine physical fitness within various sports, there remains a lack of empirical data specifically addressing the physical condition of futsal extracurricular participants at the junior secondary school level, particularly within YLPI Perhentian Marpoyan Junior High School. Existing literature extensively discusses the components, factors, and importance of physical fitness; however, limited research evaluates the actual fitness levels of student participants in school-based futsal programs. Furthermore, despite futsal's growing popularity and its inclusion in school activities, systematic physical assessments are not consistently conducted. This gap results in training programs that are less targeted and may not adequately support students' physical development. Consequently, a data-driven evaluation is needed to identify students' strengths and weaknesses across key fitness components, ensuring the development of more effective extracurricular training strategies. So, we need a data-driven review to find out what students are good at and what they need to work on in important fitness areas. This will help us come up with better extracurricular training plans.

A rigorous evaluation of the physical state of futsal extracurricular participants is crucial to acquire precise baseline data that can guide training and coaching methodologies. Given the identified concerns, including weariness, insufficient agility, challenges in ball control, and diminished muscular power, the study offers essential insights into students' physical preparedness. The results will help coaches make training plans based on research, help schools figure out how well extracurricular activities work, and add to what we know about youth physical fitness in futsal. Additionally, comprehending the kids' physical condition corresponds with the primary objective of physical education to cultivate individuals who are physically fit, cognitively equipped, and proficient in participating in sports safely and successfully. The study aims to assess essential fitness components, including stamina, speed, agility, strength, and endurance, to create a comprehensive picture of

students' physical preparation. The study also seeks to give an overall picture of the students' physical state so that training may be evaluated and planned, and to suggest ways to make extracurricular futsal training better based on the fitness results.

METHOD

Participants

The participants of this study consisted of students enrolled in the futsal extracurricular program at YLPI Perhentian Marpoyan Junior High School. All participants were active members of the extracurricular program and met the inclusion criteria related to age and participation consistency. A total of 15 students participated in the physical condition tests and served as the subjects of data collection throughout the study period. The population in this research comprised all 15 students participating in the futsal extracurricular activities at YLPI Perhentian Marpoyan Junior High School. Population is defined as the complete set of subjects within the research area that meet the established criteria (Enita et al., 2023). The sampling method used was total sampling, meaning that all members of the population were selected as the research sample. Total sampling, as explained by Sugiyono in Abdullah & Sari (2023) and further supported by Sugiyono in Fadhoil et al. (2023), is a technique in which every individual in the population is included as a sample when the population number is relatively small and manageable. Through this method, the study ensured full representation of the group being examined.

Research Design

This study employed a quantitative descriptive research design aimed at collecting information regarding the actual condition of the observed phenomenon at the time the research was conducted. Descriptive research does not test specific hypotheses but instead provides an accurate depiction of variables or conditions as they are (Zellatifanny & Mudjiyanto, 2018). The selection of this method aligns with the purpose of the study, which seeks to describe the level of physical condition among futsal extracurricular participants without manipulating variables. A descriptive design enables the researcher to systematically gather, analyze, and interpret data to obtain meaningful conclusions concerning the research objectives.

Instruments and Procedures

The research instruments consisted of standardized physical fitness tests designed to measure the dominant physical components required in futsal. Physical condition is a fundamental requirement for athletes to enhance performance and is particularly essential in futsal, which demands endurance, explosive power, speed, agility, and strength (Sajoto, 2003 as cited in D. W. D. Saputra & Kusuma, 2019). The instruments used were based on Widiastuti (2017) and included the 30-meter sprint test to measure speed, the shuttle run test to assess agility, the 15-minute run test to determine cardiorespiratory endurance, the wall squat test to evaluate quadriceps muscular strength, and the standing long jump test to measure leg explosive power. Each instrument followed established testing guidelines, using appropriate facilities such as running tracks, cones, stopwatches, whistles, and measurement tapes. Norms for scoring physical condition levels were derived from standardized tables for ages 13–15, ensuring accuracy and consistency in measurement. The research procedure began with preliminary observation of the futsal extracurricular environment to identify issues relevant to the study. Data collection was carried out through direct testing of students using the selected physical condition instruments. Participants were instructed to follow the test procedures as outlined by Widiastuti (2017), beginning with the 30-meter sprint test, followed by the shuttle run, standing long jump, wall squat, and finishing with the 15-minute endurance run. Each test was supervised by the researcher and assistants to ensure accurate timing, measurement, and documentation of results. Before the tests commenced, participants were briefed on the objectives and procedures to ensure proper understanding and compliance. Data collection occurred within the scheduled extracurricular activity periods to ensure that the testing environment aligned with participants' regular physical activity routines.

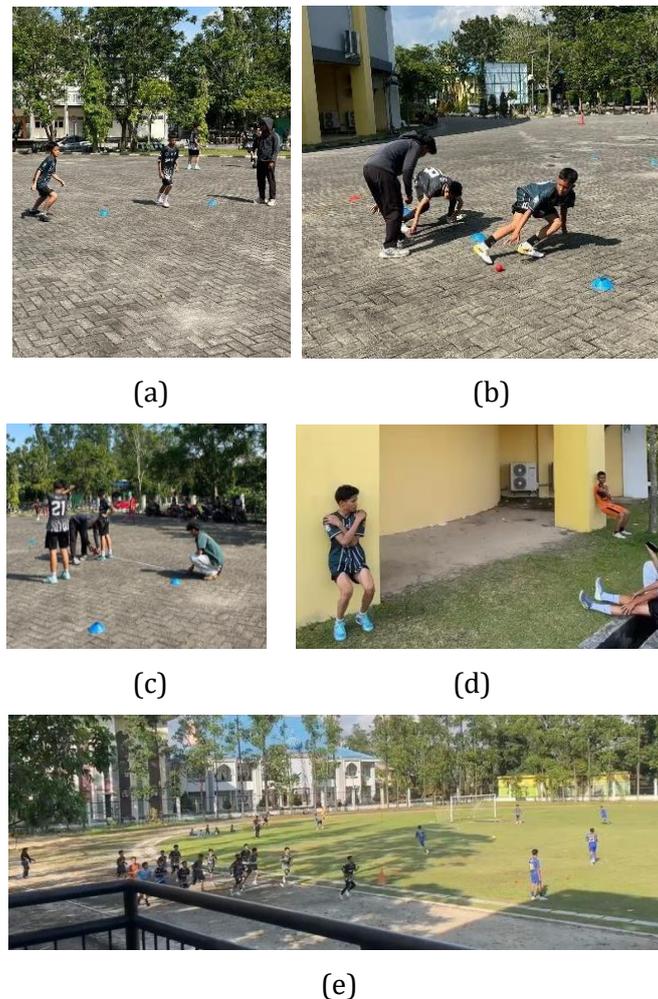


Figure 1. (a) 30-Meter Sprint Test (Speed Test), (b) Agility Test (Shuttle Run), (c) Standing Long Jump Test, (d) Wall Squat Test, and (e) 15-Minute Run Test

Data Analysis

Data were analyzed by converting the raw test results into categorical scores based on the normative tables provided by [Widiastuti \(2017\)](#), which classify scores into five categories: very good (5), good (4), average (3), poor (2), and very poor (1). Each test result was matched with the corresponding norm, and the individual scores were averaged to obtain the final physical condition score for each participant. To interpret the distribution of physical condition levels within the group, percentage analysis was conducted using the formula described by [Mahdavickyah Yusuf & Zulraflia \(2023\)](#): $P = \frac{F}{N} \times 100\%$, where F represents the frequency and N denotes the total number of participants. This analysis allowed the researcher to determine the proportion of students falling into each physical condition category. Since the study followed a descriptive design, no inferential statistical tests were performed.

RESULTS AND DISCUSSION

Results

The results of this study describe the physical condition levels of students participating in the futsal extracurricular program at YLPI Perhentian Marpoyan Junior High School, measured through five components: 30-meter sprint, agility, standing long jump, wall squat, and 15-minute run. The findings provide a comprehensive overview of the students' speed, agility, muscular power, muscular endurance, and cardiovascular endurance.

The results of the 30-meter sprint test show that the majority of students fall into the "very poor" category, with 9 students (60.00%) performing below the expected level. Additionally, 2 students (13.33%) fall into the "poor" category, and only 4 students (26.67%) demonstrate good sprinting ability. No students qualify for the "adequate" or "very good" categories. These results indicate that students'

sprint speed remains relatively low and requires systematic training improvement. The summary of the data is presented in Table 1. The trend distribution can also be observed in Figure 2.

Table 1. 30-Meter Sprint Test Data of Futsal Extracurricular Students

30-Meter Sprint Norms	Category	Score	Frequency	Percentage (%)
>4,6	Very Poor	1	9	60,00%
4,6-4,5	Poor	2	2	13,33%
4,4-4,3	Fair	3	0	0,00%
4,2-4,0	Good	4	4	26,67%
< 4,0	Very Good	5	0	0,00%
Total			15	100%

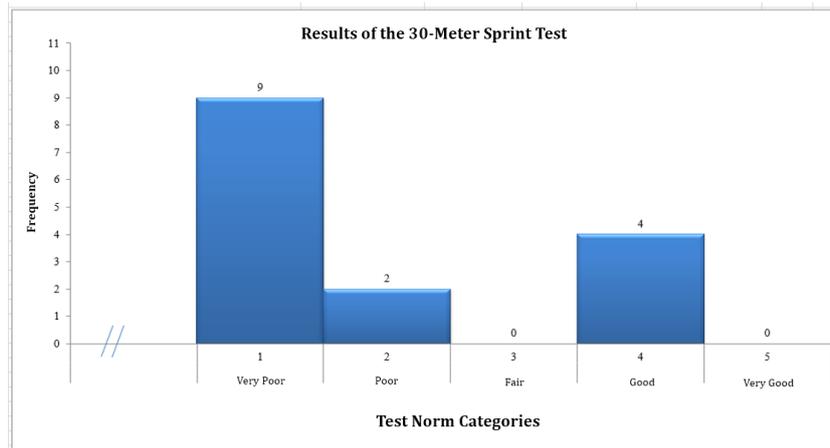


Figure 2. 30-Meter Sprint Test Data of Futsal Extracurricular Students

Agility test results reveal a more encouraging distribution. Five students (33.33%) are categorized as good, while 4 students (26.67%) fall within the adequate category. However, 3 students (20.00%) remain in the poor category, 2 students (13.33%) are classified as very good, and 1 student (6.67%) performs at a very poor level. Overall, the agility level can be considered relatively good, although improvement is still necessary for students in lower categories. The data is summarized in Table 2, also displayed in Figure 3.

Table 2. Agility Test Data of Futsal Extracurricular Students

Agility Test Norms	Category	Score	Frequency	Percentage (%)
> 16,40	Very Poor	1	1	6,67%
14,97-16,39	Poor	2	3	20,00%
13,54-14,96	Fair	3	4	26,67%
12,11-13,53	Good	4	5	33,33%
< 12,10	Very Good	5	2	13,33%
Total			15	100%

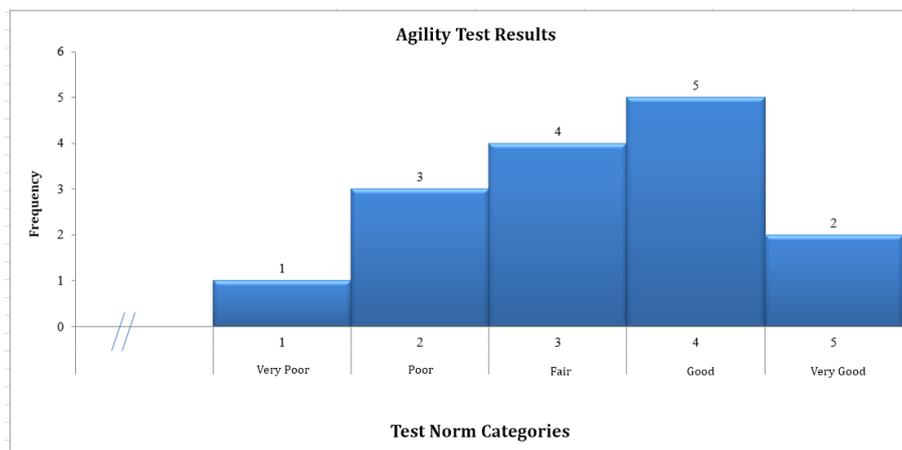


Figure 3. Agility Test Data of Futsal Extracurricular Students

Standing long jump results indicate that lower-limb explosive power remains weak among most students. Nine students (60%) fall into the very poor category, while 3 students (20%) belong to the poor category. Only 2 students (13.33%) are classified as adequate, and a single student (6.67%) achieves a good rating. No student reaches the very good category. These results suggest that lower-limb muscular power is insufficiently developed, requiring targeted strength and plyometric training. These findings are shown in Table 3, and the distribution appears in Figure 4.

Table 3. Standing Long Jump Test Data of Futsal Extracurricular Students

Standing Long Jump Norms	Category	Score	Frequency	Percentage (%)
< 220 cm	Very Poor	1	9	60%
221-230 cm	Poor	2	3	20,00%
231-240 cm	Fair	3	2	13,33%
241-250 cm	Good	4	1	6,67%
> 250 cm	Very Good	5	0	0,00%
Total			15	100%

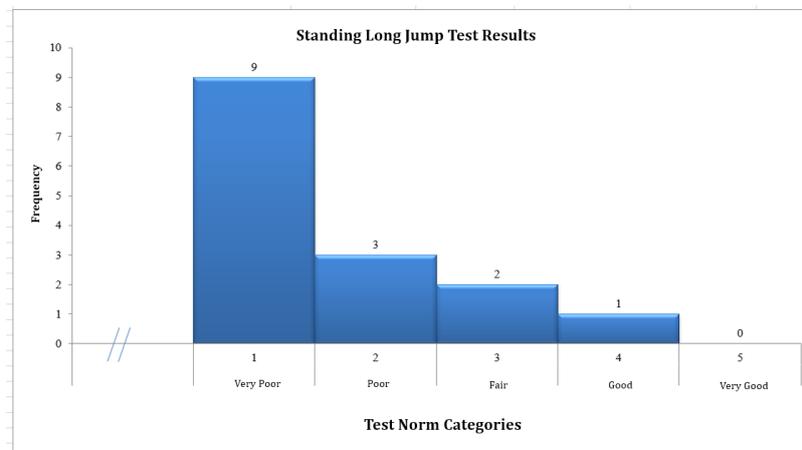


Figure 4. Standing Long Jump Test Data of Futsal Extracurricular Students

Table 4. Wall Squat Test Data of Futsal Extracurricular Students

Wall Squat Norms	Category	Score	Frequency	Percentage (%)
< 30 seconds	Very Poor	1	0	0,00%
30-57 seconds	Poor	2	1	6,67%
58-75 seconds	Fair	3	3	20,00%
76-102 seconds	Good	4	6	40,00%
> 102 seconds	Very Good	5	5	33,33%
Total			15	100%

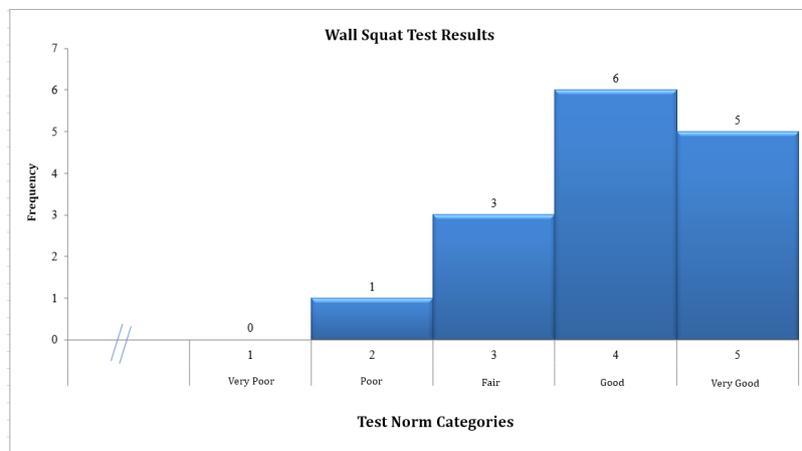


Figure 5. Wall Squat Test Data of Futsal Extracurricular Students

Wall squat data show more positive outcomes, with six students (40.00%) classified as good and five students (33.33%) deemed very good. Three students (20.00%) are in the adequate category, while only one student (6.67%) falls into the poor category. None are categorized as very poor. These results highlight that the students' lower-limb endurance is relatively well-developed. The data is shown in Table 4, and illustrated through Figure 5.

Finally, the 15-minute run test reveals that cardiovascular endurance is at a low level overall. Ten students (66.67%) fall within the very poor category, while 4 students (26.67%) are in the adequate category, and only 1 student (6.67%) reaches the good level. These findings underline that aerobic capacity is insufficient to support continuous high-intensity play in futsal. These results can be seen in Table 5, also displayed in Figure 6.

Table 5. 15-Minute Run Test Data of Futsal Extracurricular Students

15-Minute Run Norms	Category	Score	Frequency	Percentage (%)
< 2100 m	Very Poor	1	10	66,67%
2100-2399 m	Poor	2	0	0,00%
2400-2699 m	Fair	3	4	26,67%
2700-3000 m	Good	4	1	6,67%
> 3000 m	Very Good	5	0	0,00%
Total			15	100%

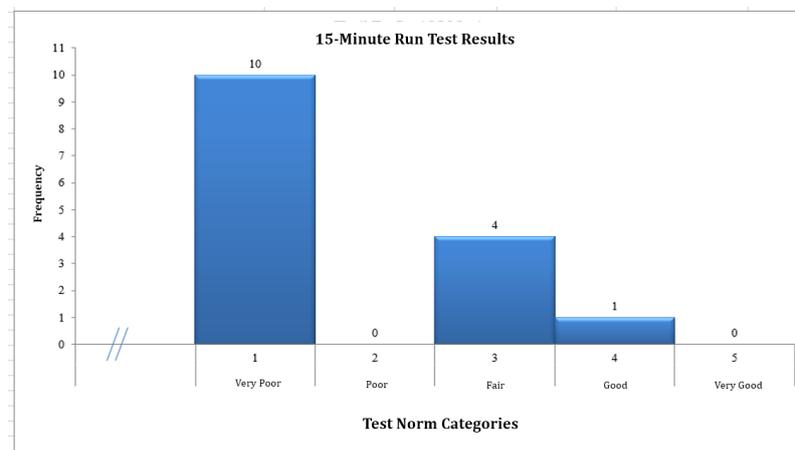


Figure 6. 15-Minute Run Test Data of Futsal Extracurricular Students

Across all components, the total conversion score reaches 188, with an overall average of 2.5, placing the students' physical condition within the "fair" category. Nonetheless, the general trend reveals significant deficits in speed and cardiovascular endurance, whereas muscular endurance and lower-limb power are relatively stronger.

Discussion

The study findings indicate that the overall physical condition of futsal extracurricular students remains below the optimal level required for futsal performance. Physical condition is a crucial determinant of achievement in sports, particularly in futsal, which demands high-intensity movements, frequent directional changes, and sustained endurance (Candra, 2024; Zikri & Yulianti, 2024). The low average physical fitness score demonstrates that students have not yet developed the necessary physical readiness to perform effectively in futsal activities. The poor results in the 30-meter sprint test reflect insufficient speed, an essential component in futsal for chasing the ball, pressing opponents, and initiating counterattacks. This deficiency may arise from limited exposure to speed-focused training and a lack of technical proficiency in sprint mechanics. The agility results, while relatively better, still require improvement because futsal involves rapid directional changes that demand high agility to respond effectively to dynamic play situations (Nurdilla et al., 2020).

The standing long jump results indicate that lower-limb explosive power among students is notably weak. Strong leg power is vital in executing powerful kicks, explosive starts, and quick jumps (Candri & Gazali, 2023). These findings highlight the need for structured plyometric training to enhance explosive power. Conversely, the wall squat performance demonstrates that most students possess

adequate muscular endurance, suggesting they can sustain lower-limb contractions effectively during prolonged play. The weakest component observed is cardiovascular endurance, as reflected in the 15-minute run test. Futsal requires sustained aerobic and anaerobic capacity to maintain performance intensity (Prasetya & Sasmariato, 2023). The low endurance scores indicate that students fatigue easily, negatively affecting their decision-making, reaction time, and ball control during matches.

When compared to similar studies, the findings align with the results reported by Andana, Agustina, & Sulaiman (2023), who also found that most futsal extracurricular students fell within the moderate category. The results are also consistent with Pratama & Henjilito (2024), who reported that futsal participants often demonstrate moderate physical fitness, particularly with deficits in cardiovascular endurance. Likewise, Mubarok (2024) found that futsal athletes commonly exhibit weaknesses in explosive power and aerobic capacity, strengthening the notion that many youth futsal players lack adequate physical conditioning. Overall, the findings demonstrate that although students are motivated to participate in extracurricular activities, the current training approach is insufficient to improve fitness components comprehensively. Training sessions appear to emphasize gameplay over structured conditioning, resulting in underdeveloped fitness components critical to futsal performance.

These results suggest the need for integrating scientific training principles into the extracurricular futsal program. Coaches should prioritize structured conditioning sessions emphasizing speed development, aerobic endurance, plyometrics, and agility drills. Enhancing students' physical fitness will not only improve game performance but also contribute to their long-term health and athletic development. The findings also imply that schools should provide consistent training schedules and adequate facilities to support comprehensive fitness development. The study contributes valuable empirical data regarding the physical condition of junior secondary futsal participants, a population rarely evaluated systematically in school-based sports programs. This research addresses a gap by providing detailed analyses of multiple fitness components and offering evidence-based recommendations for improving youth futsal training. It also supports educational institutions in understanding the current limitations of students' fitness levels and underscores the importance of structured physical conditioning in extracurricular sports.

Future research should involve larger and more diverse samples to broaden the relevance of findings. Incorporating additional variables, such as lifestyle habits, psychological readiness, and technical skill levels, would provide a more comprehensive evaluation of student-athletes. It is recommended that coaches implement structured training programs targeting specific weaknesses, particularly speed and cardiovascular endurance, using interval training, fartlek methods, and circuit training. Schools should encourage students to adopt healthy lifestyles to support physical conditioning, and regular fitness assessments should be conducted to monitor progress and adapt training accordingly.

Limitations

The study was limited to assessing the physical condition of 15 futsal extracurricular students at YLPI Perhentian Marpoan Junior High School using physical fitness tests standardized for the 13–15 age category. The scope was confined to five main components of physical fitness relevant to futsal: speed, agility, endurance, strength, and explosive power. This focus ensured depth of measurement but excluded other potential determinants such as psychological factors, technical skills, or tactical understanding. Limitations include the small sample size, which restricts generalization beyond the studied population, and environmental factors during testing that may have influenced performance. Nevertheless, the methodology adhered to established physical fitness assessment standards and provided accurate descriptive data regarding the participants' physical condition.

CONCLUSION

The findings of this study confirm that the expectations outlined in the Introduction regarding the evaluation of students' physical condition are consistent with the results obtained in the Results and Discussion section. The overall average physical condition score of 2.5, rounded to 3, places the students in the "Fair" category, indicating that the majority of futsal extracurricular participants at SMP YLPI Perhentian Marpoan possess a level of physical fitness that remains below the optimal standard required for futsal performance. Fundamental components of physical fitness, such as speed, endurance, strength, agility, and flexibility, have not yet reached a sufficiently high level to support optimal gameplay. This condition aligns with the issues identified earlier, such as students' limited stamina,

reduced agility, and insufficient muscular strength, which hinder their ability to perform effectively during futsal activities. The results demonstrate a clear compatibility between the research objectives and the empirical findings, showing that the systematic assessment of physical condition provides essential evidence of students' readiness and limitations. Furthermore, the findings highlight the necessity for a more structured, routine, and varied physical training program to elevate students' overall fitness levels. The study also shows that improvement must involve both students and instructors through consistent collaboration in developing effective training methods. Looking forward, the research provides prospects for further development in designing targeted physical conditioning strategies and encourages future studies to explore additional variables related to motivation, training patterns, and broader fitness parameters to enhance the comprehensive understanding of youth physical fitness in futsal.

The findings of this study have several important implications for physical education practice, coaching strategies, and school-based extracurricular development. The overall classification of students' physical condition in the Fair category indicates that their current level of fitness is not yet optimal to support high-intensity futsal performance. This implies that coaches and physical education teachers must integrate more targeted and periodized conditioning programs that address key components such as speed, agility, muscular endurance, explosive power, and cardiorespiratory fitness. Furthermore, schools may consider allocating additional time, facilities, and structured guidance to ensure that extracurricular sports programs contribute effectively to students' physical development. These results also highlight the need for early identification of fitness deficiencies, enabling timely interventions that support student performance, health, and injury prevention. At the theoretical level, the study contributes to the growing body of evidence that physical conditioning remains a central determinant of student performance in school-based futsal activities.

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AUTHOR CONTRIBUTION STATEMENT

GR contributed to the conception, design, data collection, analysis, and drafting of the manuscript. RJ and ZN supervised the research process, provided methodological guidance, validated the data analysis, and reviewed the final manuscript. Both authors approved the final version of the article.

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