

Physical Fitness Level Of Wrestling Athletes At Pon Aceh 2024

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Submission date: 15-Aug-2025 05:10AM (UTC+0530)

Submission ID: 2729723788

File name: PUBLISH_IQRAM_IJESS_22-26.pdf (538.64K)

Word count: 2625

Character count: 15610



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Background	Wrestling is a sport that demands high physical fitness, as superior physical condition facilitates mastery of techniques and tactics during competition. Assessing the physical fitness of athletes is essential to optimize training programs and performance outcomes.
Objectives	This study aimed to determine the physical fitness levels of wrestling athletes participating in PON Aceh 2024.
Methods	A qualitative descriptive design was employed. The population consisted of all wrestling athletes at PON Aceh 2024, and total sampling was used, resulting in a sample of seven athletes. Physical fitness was assessed using seven tests: 1) handgrip strength (hand grip dynamometer), 2) arm strength (expanding dynamometer), 3) back strength (back dynamometer), 4) leg strength (leg dynamometer), 5) waist flexibility (flexiometer), 6) agility (hexagonal obstacle test), and 7) VO ₂ max (bleep test). Data were analyzed descriptively and presented as percentages.
Results	The findings indicated the following distribution of physical fitness levels: very good, 1 athlete (14.29%); good, 1 athlete (14.29%); moderate, 4 athletes (57.14%); poor, 1 athlete (14.29%); and very poor, 0 athletes (0.00%). Overall, the athletes' physical fitness was predominantly classified as moderate.
Conclusion	The physical fitness level of wrestling athletes at PON Aceh 2024 was moderate, suggesting the need for targeted training interventions to enhance overall athletic performance.

Keywords: Physical Fitness, Wrestling, PON

Received: June, 10 2025. Accepted: June, 25 2025

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How to Cite: Iqram, M., Rinaldy, A., Jafar, M., Isdarianty, N. L., Mansur, M., Karimuddin, K., & Fahrur Razi, S. M. (2024). Physical fitness level of wrestling athletes at PON Aceh 2024. *International Journal Emerging of Sport Science*, 1(2), 22–26.

INTRODUCTION

Wrestling is a combat sport that involves physical contact between two athletes, in which each competitor attempts to take down, control, and pin their opponent on the mat using correct techniques that ensure the opponent's safety. This sport is characterized by direct engagement, with athletes employing pushing, pulling, tripping, and throwing maneuvers until one wrestler's shoulders are firmly on the mat (Hanif & Setiawan, 2021).

Wrestling has a long but intermittent history in Aceh. The sport was initially represented in the National Sports Week (Pekan Olahraga Nasional, PON) in Jakarta in 1993, but its development stagnated until 2010, when the Aceh Provincial Wrestling Association (PGSI) was re-established under the initiative of Saiful Bahri, a local sports advocate. In the same year, the Aceh wrestling team participated in the National Senior Championship, the Presidential Cup in Sleman, Yogyakarta, with six athletes, but failed to secure any medals. During PON West Java 2016, the Aceh wrestling team advanced three athletes to the semifinals, with Suryadi Siagian winning a bronze medal for Aceh. More recently, in October 2023, Aceh wrestlers participated in a national championship in Medan, North Sumatra, but did not achieve medal success.

The National Sports Week (PON) is a major multi-sport event in Indonesia, organized every four years by the Indonesian National Sports Committee (KONI) and attended by all provincial contingents. PON XXI Aceh–North Sumatra was held from 9 to 20 September 2024, during which Aceh wrestling athletes competed. However, the training programs and schedules provided to athletes have historically been

unstructured, often conducted without standardized planning. Such conditions highlight the importance of systematic improvement, particularly regarding physical fitness, which plays a crucial role in athletes' performance.

Physical fitness is a key factor in achieving optimal performance in wrestling, complementing mastery of technique, tactical understanding, and mental resilience (Supriatna, 2023). The enhancement of physical fitness is a primary goal of athlete development programs managed by KONI Aceh, aimed at maximizing athletes' performance in preparation for national competitions. According to Hardiansyah (in Saputra & Asmi, 2019), physical fitness encompasses all aspects of physical activity, including speed, agility, flexibility, strength, muscular power, and endurance. In wrestling, these components must be trained systematically to ensure optimal performance, allowing athletes to perform consistently across all matches. Endurance, flexibility, speed, balance, agility, and strength are essential for wrestlers to successfully complete each match (Saputra & Asmi, 2019).

Moreover, explosive power is a critical element for competitive success in wrestling (Ginting, in Ayuningtias & Nurrochmah, 2022). Dominant physical fitness components for wrestling include upper-limb power, lower-limb power, flexibility, balance, speed, and endurance (Pravirasaputra, in Setiawati & Perdani, 2017). Wrestlers who participate in centralized training programs carry the responsibility to perform at their best and contribute to Aceh's medal tally. Preliminary observations indicate that some athletes preparing for PON Aceh–North Sumatra exhibit limitations in respiratory endurance and muscle strength, underscoring the need to assess and enhance their physical fitness.

Physical fitness is an integrated system of components that cannot be separated in either development or maintenance. Optimal fitness is essential for wrestlers to execute daily activities effectively and to serve as a foundation for competitive achievement (Sajoto, in Hartanto, 2014). It encompasses strength, speed, endurance, flexibility, and coordination (Irawadi, in Hardiansyah, 2018), and all sports activities inherently involve these elements (Bompa, in Chrissandy & Sutopo, 2016). Key components of physical fitness include strength, endurance, muscular power, speed, flexibility, balance, agility, accuracy, reaction, and coordination.

Given the critical role of physical fitness in wrestling performance, this study aims to evaluate the physical fitness levels of wrestling athletes representing Aceh at PON 2024. The findings are expected to provide evidence-based recommendations for structured training programs to enhance athletes' readiness and competitive outcomes.

METHOD

Participant

The participants of this study consisted of all wrestling athletes representing Aceh at PON 2024. Using saturated sampling, all members of the population were included as participants, resulting in a total sample of seven athletes (Siyoto & Sodik, 2015). The athletes were selected based on their active involvement in the national-level preparation program and their readiness to participate in physical fitness assessments.

Research Design

This study employed a quantitative descriptive design, which focuses on objectively analyzing phenomena using numerical data and statistical methods (Hamdi & Bahruddin, 2015). Descriptive research aims to measure and describe specific characteristics or skills of individuals. According to Ramdhan (2021), "Descriptive research is a method used to describe research findings, providing explanations, validation, and depiction of the phenomenon under investigation." The study examined the physical fitness components of wrestlers, including strength, flexibility, agility, and cardiovascular endurance.

Data Analysis

Data were collected through a sepak takraw-specific skill test that measured passing accuracy. Data collection was conducted using seven standardized physical fitness tests, which included hand muscle strength measured with a handgrip dynamometer, arm muscle strength assessed with an expanding dynamometer, back muscle strength evaluated using a back dynamometer, leg muscle strength measured with a leg dynamometer, waist flexibility assessed with a flexometer, agility measured through the hexagonal agility test, and cardiovascular endurance evaluated via the bleep test. The collected data were analyzed by calculating the mean scores using the formula $\bar{X} = \frac{\sum X}{N}$, where \bar{X} represents the mean score, $\sum X$ is the total score, and N denotes the number of participants. Additionally, frequency distribution was calculated to determine the percentage of athletes within each physical fitness category using the formula $P = \frac{F}{N} \times 100\%$, where P represents the percentage, F is the frequency of occurrence, and N is the total

sample (Hadi, 2016). This analytical approach enabled the classification of the athletes' physical fitness levels and provided comprehensive insights into their readiness for competitive performance.

RESULTS AND DISCUSSION

Results

This study aimed to evaluate the physical fitness levels of wrestling athletes representing Aceh at PON 2024, serving as a critical parameter for assessing the success of athlete development programs. Descriptive statistical analysis of the seven athletes revealed a mean score of 400.00, a mode of 0, a median of 378.51, a standard deviation of 46.97, a minimum score of 359.25, and a maximum score of 484.11 (Table 1).

Table 1. Descriptive Statistics of Physical Fitness Levels of Aceh PON Wrestling Athletes

Statistic	Value
N	7
Mean	400.00
Mode	0
Median	378.51
Std. Deviation	46.97
Minimum	359.25
Maximum	484.11

The frequency distribution further illustrated the categorization of physical fitness levels among the athletes (Table 2). The majority of athletes (57.14%) were classified as having a **moderate** level of physical fitness, while one athlete (14.29%) fell into the **very good** category, one athlete (14.29%) into the **good** category, one athlete (14.29%) into the **poor** category, and no athlete was categorized as **very poor**.

Table 2. Frequency Distribution of Physical Fitness Levels of Aceh PON Wrestling Athletes

Interval	Category	Frequency	Percentage (%)
$X > 470.46$	Very Good	1	14.29
$432.49 < X \leq 470.46$	Good	1	14.29
$376.51 < X \leq 423.49$	Moderate	4	57.14
$329.55 < X \leq 376.51$	Poor	1	14.29
$X \leq 329.55$	Very Poor	0	0.00
Total		7	100.00



Figure 1. Physical Fitness Levels of Aceh PON Wrestling Athletes

The diagram (Figure 1) visually represents the distribution of physical fitness levels among the athletes. It shows that 14.29% of athletes achieved a **very good** level, 14.29% a **good** level, 57.14% a **moderate** level, 14.29% a **poor** level, and 0% a **very poor** level. These findings indicate that the overall physical fitness of the Aceh PON wrestling athletes is predominantly at a **moderate** level, highlighting areas for targeted improvement in training programs.

DISCUSSION

6

The results of this study indicate that the physical fitness of Aceh PON wrestling athletes is predominantly at a moderate level, with 57.14% of the athletes falling into this category. Only a small proportion of athletes achieved very good or good levels (14.29% each), while 14.29% were categorized as poor, and none fell into the very poor category. This distribution suggests that while some athletes possess strong physical capabilities, there remains substantial room for improvement across the team.

Physical fitness is a critical determinant of success in wrestling, as it directly influences an athlete's ability to perform techniques, maintain agility, and sustain endurance throughout matches (Supriatna, 2023; Saputra & Asmi, 2019). The observed moderate level among the majority of athletes may be attributed to unstructured training programs, as preliminary observations noted inconsistencies in training schedules and insufficient emphasis on endurance and muscular strength development. Enhancing physical fitness, particularly muscular power, cardiovascular endurance, agility, and flexibility, is essential for improving overall performance and competitive outcomes (Ginting in Ayuningtias & Nurrochmah, 2022; Prawirasaputra in Setiawati & Perdani, 2017).

The findings align with prior research emphasizing that comprehensive conditioning programs, tailored to the specific demands of wrestling, are crucial for optimizing performance. Structured, periodized training plans can address deficits in strength, agility, and endurance, thereby increasing athletes' chances of achieving success in national competitions such as PON. These results underscore the importance of monitoring physical fitness levels as a key indicator of athlete preparedness and as a metric for evaluating the effectiveness of development programs.

CONCLUSION

Based on the descriptive statistical analysis and frequency distribution of physical fitness levels, the Aceh PON wrestling athletes predominantly demonstrate a **moderate** level of physical fitness. Only a minority achieved good or very good levels, while one athlete was categorized as poor. These findings highlight the need for systematic and structured training programs that focus on improving strength, endurance, agility, and flexibility. Regular assessment of physical fitness can serve as an essential benchmark for tracking progress and enhancing the overall effectiveness of athlete development programs, ultimately supporting competitive success in national-level events such as PON.

ACKNOWLEDGMENT

The authors would like to express their sincere gratitude to the Aceh Provincial Wrestling Association (PGSI) and all athletes who participated in this study for their cooperation and support throughout the data collection process. Special thanks are extended to the faculty and staff of the Physical Education, Health, and Recreation Study Program at Universitas Syiah Kuala for providing guidance and access to research facilities. The authors also appreciate the constructive feedback from reviewers and colleagues, which significantly contributed to the improvement of this manuscript.

AUTHOR CONTRIBUTION STATEMENT

Muhammad Iqram contributed to the conceptualization, research design, and manuscript drafting. Alfian Rinaldy and Muhammad Jafar were responsible for data collection, analysis, and interpretation. Novi Lidya Isdarianty and Mansur assisted with literature review, data validation, and editing of the manuscript. Karimuddin contributed to the statistical analysis and visualization of results. Sayed M. Fahrur Razi provided supervision, critical review, and final approval of the manuscript. All authors have read and approved the final version of the manuscript and agree to be accountable for all aspects of the work.

CONFLICT OF INTEREST AND FUNDING

There is no conflict of interest

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