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Physical Condition Profile Of Junior Artistic Gymnasts Semarang Using GFMT Test

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ABSTRACT

Limited scientific data regarding the physical condition of junior artistic gymnasts remain a significant issue within the Semarang City Special Sports Class program. In many training environments, evaluations tend to focus primarily on technical skills, while systematic assessments of physical condition are still insufficiently implemented. Comprehensive physical profiling is essential to support evidence-based training programs, optimize athletic performance, and reduce the risk of injury in artistic gymnastics. Therefore, this study aimed to analyze the physical condition profile of junior artistic gymnasts in the Semarang City Special Sports Class using the Gymnastics Functional Measurement Tool (GFMT) in 2026. This study employed a quantitative descriptive research design using a total sampling technique. The participants consisted of six junior artistic gymnasts aged 13–15 years, including three male and three female athletes. Data were collected using the Gymnastics Functional Measurement Tool (GFMT), which measures gymnastics-specific physical capacities such as strength, flexibility, agility, balance, speed, and muscular endurance. The obtained scores were converted into a standardized scale with a maximum score of 100 points and analyzed descriptively using mean values and percentage distributions. The findings revealed that the physical condition of junior male artistic gymnasts was predominantly classified in the moderate category (66.7%), while all junior female artistic gymnasts (100%) were also categorized as moderate. These findings indicate that most gymnasts possess an adequate but not yet optimal level of physical condition. In conclusion, the physical condition profile of junior male and female artistic gymnasts in the Semarang City Special Sports Class is generally categorized as moderate, indicating the need for more targeted and individualized physical conditioning programs to enhance performance development.

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INTRODUCTION

Artistic gymnastics is recognized as one of the most technically demanding and physically intensive sports, requiring athletes to demonstrate exceptional levels of strength, flexibility, balance, agility, coordination, speed, and explosive power simultaneously during performance execution. Artistic Gymnastics The complexity of

movement patterns in artistic gymnastics places substantial physiological and biomechanical demands on athletes, particularly at the junior developmental stage where physical growth and motor learning processes occur concurrently. Previous studies have emphasized that physical condition serves as the fundamental determinant of technical mastery and competitive achievement in gymnastics performance (Sleeper et al., 2012; Sleeper, 2016; Tresnowati & Panggraita, 2020). Junior gymnasts with inadequate physical preparation are more vulnerable to performance decline, movement inefficiency, and sports injuries, which may negatively affect long-term athlete development.

Recent developments in sports science have highlighted the importance of systematic physical assessment as an evidence-based approach for monitoring athlete readiness and optimizing training adaptations (Bompa & Buzzichelli, 2019; Haff & Triplett, 2016). In gymnastics, coaches are required not only to improve technical proficiency but also to ensure that athletes possess adequate functional physical capacities to safely execute increasingly complex skills. Physical condition profiling therefore becomes essential for identifying strengths and weaknesses in gymnasts' performance characteristics, enabling coaches to design individualized and progressive training programs (Lloyd et al., 2015). Moreover, the early identification of physical deficiencies can contribute significantly to injury prevention strategies and athlete sustainability in long-term training systems.

Among junior artistic gymnasts, the monitoring of physical condition is particularly important because this developmental phase is characterized by rapid physical growth, neuromuscular adaptation, and psychological maturation (Myer et al., 2015). Failure to appropriately evaluate physical capacities during adolescence may result in imbalanced physical development, overtraining, and increased injury risk. Despite the importance of regular assessment, many gymnastics training environments continue to prioritize technical skill repetition while neglecting comprehensive physical evaluation protocols. Consequently, training programs are often developed based on subjective observations rather than objective scientific data.

In the context of Indonesian gymnastics development, especially within regional sports programs, empirical data concerning the physical condition profile of junior artistic gymnasts remain limited. This issue is evident in the Special Sport Class program in Semarang City, where systematic evaluation using standardized measurement instruments has not been optimally implemented. Coaches frequently encounter difficulties in designing individualized conditioning programs because objective baseline data regarding athletes' physical capacities are unavailable. Such conditions potentially hinder performance optimization and limit the effectiveness of long-term athlete development programs.

Contemporary sports science research has increasingly emphasized the integration of functional assessment tools into athlete monitoring systems. Functional movement and physical performance assessments are widely utilized to evaluate readiness, identify injury risks, and guide evidence-based training interventions (Cook et

al., 2014; Kiesel et al., 2011). In gymnastics, several studies have investigated the relationship between physical condition components and performance outcomes. Strength, flexibility, balance, coordination, and power have consistently been reported as critical predictors of successful gymnastics performance (Di Cagno et al., 2020; Marina & Jemni, 2014).

The Gymnastics Functional Measurement Tool (GFMT) was developed as a sport-specific assessment instrument designed to measure the functional physical capacities required in gymnastics participation. Unlike general fitness tests, the GFMT evaluates movement competencies directly associated with gymnastics performance demands, including upper-body strength, core stability, lower-body explosive power, flexibility, balance, and neuromuscular control (Sleeper et al., 2012). The instrument has been increasingly recognized as a valid and reliable tool for assessing both male and female gymnasts across different competitive levels.

Previous investigations have demonstrated the usefulness of GFMT in identifying functional limitations and supporting injury prevention programs among gymnasts (Sleeper, 2016). Research by Hidayah and Sipayung (2024) further emphasized that structured physical monitoring contributes positively to training effectiveness and athlete readiness. Similarly, Firmansyah (2017) explained that GFMT-based evaluations allow coaches to formulate individualized training prescriptions tailored to athletes' specific deficiencies. Such approaches align with contemporary sports performance models that advocate individualized athlete development rather than generalized conditioning programs.

Internationally, studies involving junior gymnasts have shown that physical condition profiles differ according to age category, training experience, biological maturation, and competitive level (Bacciotti et al., 2021; Donti et al., 2019). Research findings consistently indicate that young gymnasts require systematic monitoring to ensure balanced physical development during growth periods. Moreover, longitudinal athlete monitoring has been associated with improved performance consistency and reduced injury incidence (Read et al., 2016).

In Indonesia, several studies have explored physical fitness and performance characteristics in various sports; however, gymnastics-specific research remains relatively underdeveloped. Existing investigations often focus on technical achievement or general fitness components rather than functional physical profiling using specialized instruments such as GFMT. Consequently, there is still limited scientific evidence regarding the implementation of GFMT within Indonesian junior gymnastics programs, particularly at regional athlete development centers.

Although numerous international studies have discussed the importance of physical condition assessment in gymnastics, several important gaps remain unresolved. First, most previous studies have been conducted in elite or senior athlete populations, while empirical investigations involving junior artistic gymnasts are still relatively scarce. This limitation is significant because junior athletes possess distinct physiological and developmental characteristics that require age-appropriate evaluation

and training approaches. Second, previous research has predominantly examined isolated physical components such as flexibility, strength, or balance independently, rather than providing comprehensive physical condition profiles using integrated functional measurement systems. The GFMT offers a multidimensional assessment approach that aligns closely with the movement demands of gymnastics, yet its application in developing countries, including Indonesia, remains limited. Third, studies investigating gymnastics athlete monitoring within Indonesian sports education systems are still minimal. In the Semarang City Special Sport Class program, no comprehensive database currently exists regarding the physical condition characteristics of junior artistic gymnasts. As a result, coaches lack evidence-based references for designing individualized conditioning programs that correspond to athletes' actual functional capacities. Fourth, the integration of sports science approaches into junior gymnastics coaching in Indonesia has not been fully optimized. Many training programs continue to rely on conventional coaching practices without incorporating objective assessment data into training planning and evaluation processes. This situation creates a gap between theoretical advancements in sports science and practical implementation in athlete development programs.

Therefore, this study addresses these limitations by providing a comprehensive analysis of the physical condition profile of junior artistic gymnasts in Semarang City using the GFMT. The research contributes empirical evidence regarding the functional physical characteristics of Indonesian junior gymnasts while also supporting the implementation of evidence-based coaching practices within regional athlete development systems.

Based on the aforementioned problems and research gaps, this study aims to analyze the physical condition profile of junior artistic gymnasts in the Semarang City Special Sport Class using the Gymnastics Functional Measurement Tool (GFMT). Specifically, this research seeks to identify the level of physical capacities possessed by junior gymnasts across multiple functional components relevant to gymnastics performance. The novelty of this study lies in several aspects. First, this research applies the GFMT as a sport-specific functional assessment tool within the context of junior artistic gymnastics development in Indonesia, particularly in Semarang City. Previous Indonesian studies rarely utilized gymnastics-specific assessment instruments for athlete profiling. Second, this study provides comprehensive empirical data regarding the physical condition characteristics of junior artistic gymnasts, which can serve as an evidence-based reference for coaches, sports scientists, and athletic trainers.

Third, this research integrates sports science principles into athlete development by emphasizing objective and systematic physical evaluation as the foundation for individualized training program design. Through the identification of functional strengths and weaknesses, coaches can develop more targeted, efficient, and safe conditioning programs. Fourth, the findings of this study are expected to contribute to injury prevention efforts and long-term athlete development strategies within junior gymnastics programs.

In addition, the present study strengthens the scientific foundation for implementing athlete monitoring systems in Indonesian gymnastics coaching environments. The availability of objective physical condition data may support decision-making processes related to training progression, talent identification, and athlete readiness for competition. Consequently, this research not only contributes theoretically to sports science literature but also provides practical implications for improving gymnastics coaching quality at the regional and national levels.

In conclusion, the evaluation of physical condition using the GFMT is essential for understanding the functional readiness of junior artistic gymnasts. Considering the limited availability of empirical data in Indonesian gymnastics contexts, this study provides an important contribution toward evidence-based athlete development. The results are expected to support coaches in designing more individualized and scientifically grounded training programs, thereby enhancing performance quality, minimizing injury risks, and promoting sustainable athlete development in artistic gymnastics.

METHODS

This study employed a descriptive quantitative research design to analyze the physical condition profile of junior artistic gymnasts in Semarang using the Gymnastics Functional Measurement Tool (GFMT). Descriptive quantitative research is appropriate for identifying, describing, and interpreting the characteristics of a phenomenon objectively through numerical data without testing causal relationships or specific hypotheses (Hardani et al., 2020). This approach has been widely applied in sports science research to evaluate athlete physical characteristics and provide evidence-based descriptions of performance-related variables (Creswell & Creswell, 2018; Thomas et al., 2022). The study was conducted at the Wimilia Gymnastics Club, which serves as one of the training centers for the Semarang City Special Sport Class program.

The population consisted of junior artistic gymnasts aged 13–15 years participating in the Semarang City Special Sport Class program. The study used a total sampling technique, whereby all members of the population were selected as research participants. Consequently, the sample comprised six gymnasts, including three male and three female athletes. Total sampling is considered appropriate when the population size is limited and all participants possess characteristics relevant to the research objectives (Sugiyono, 2021). Previous studies in gymnastics performance analysis have similarly employed small but specialized athlete samples due to the limited availability of competitive gymnasts within specific training categories (Donti et al., 2019; Bacciotti et al., 2021).

Data collection was conducted using tests and measurements through the Gymnastics Functional Measurement Tool (GFMT), which is recognized as a valid and reliable instrument for assessing gymnastics-specific physical capacities (Sleeper et al., 2012; Sleeper, 2016). The GFMT evaluates multiple physical components required in

artistic gymnastics, including muscular strength, explosive power, flexibility, agility, balance, speed, and core stability. For female gymnasts, the test battery included Rope Climb Test, Jump Test, Hanging Pikes Test, Shoulder Flexibility Test, Agility Test, Over-grip Pull-up Test, Splits Test, Push-up Test, 20-yard Sprint Test, and Handstand Hold Test. Meanwhile, male gymnasts completed Hanging Pikes Test, Rings Hold Test, Vertical Jump Test, Shoulder Flexibility Test, Handstand Push-ups Test, Agility Test, Star Excursion Balance Test, Handstand Hold Test, Over-grip Pull-ups Test, and Splits Test. Each participant received a recovery interval of approximately 5–10 minutes between test items to minimize fatigue effects and maintain measurement reliability (Sleeper et al., 2012; Haff & Triplett, 2016).

The raw scores obtained from each GFMT item were converted into a 1–10 ordinal scale according to the standardized GFMT scoring conversion table. The scores from all test items were subsequently summed to produce a total GFMT score with a maximum value of 100 points. Data analysis employed descriptive percentage analysis using Microsoft Excel to determine the distribution of physical condition categories among athletes. Furthermore, the equal-interval classification method was used to categorize the results into excellent, good, moderate, poor, and very poor classifications (Kadir, 2015). This classification approach is frequently utilized in sports performance studies to facilitate the interpretation of athlete physical condition data and support evidence-based coaching decisions (Bompa & Buzzichelli, 2019; Lloyd et al., 2015).

RESULTS AND DISCUSSION

Result

The data obtained in this study relate to the dominant components of physical condition in artistic gymnastics, collected through tests and measurements using the Gymnastics Functional Measurement Tool (GFMT). The subjects of this study were junior artistic gymnasts from the Semarang city Special Sport Class, totaling 6 gymnasts, consisting of 3 males and 3 females gymnasts. The results of the physical condition measurements are presented in two tables based on the gymnasts gender.

Table 1.
Physical condition table of junior male and female artistic gymnasts of Semarang city Special Sport Class

Gender	Value	Category	Frequency	Percentage
Male	81-100	Excellent	0	0%
	61-80	Good	1	33,3%
	41-60	Moderate	2	66,7%
	21-40	Poor	0	0%
	0-20	Very Poor	0	0%
		Total	**3**	**100%**
Female	81-100	Excellent	0	0%
	61-80	Good	0	0%
	41-60	Moderate	3	100%
	21-40	Poor	0	0%
	0-20	Very Poor	0	0%
		Total	**3**	**100%**

Based on Table 1, the physical condition level of male junior gymnasts is predominantly in the moderate category, with 2 gymnasts (66.7%), while 1 gymnast (33.3%) falls into the good category, and none are classified as excellent, poor, or very poor. Meanwhile, all female gymnasts (100%) are in the moderate category, indicating that their physical condition generally remains at a moderate level and has not yet reached an optimal state. These findings suggest that both male and female gymnasts still require overall improvement in their physical condition.

Table 2.
Table of value ranges and categories

Value	Category
9-10	Excellent
7-8	Good
5-6	Moderate
3-4	Poor
1-2	Very Poor

Based on Table 2, the classification of scores in this study uses a range of values to determine the categories of athletes' physical condition levels, scores of 9–10 are classified as excellent, 7–8 as good, 5–6 as moderate, 3–4 as poor, and 1–2 as very poor. This classification serves as a reference for interpreting the measurement results obtained from the GFMT instrument, allowing numerical data to be transformed into more easily understood categories. Through this grouping, researchers are able to systematically describe the athletes' physical abilities, compare results among subjects, and identify components of physical condition that need improvement as a basis for developing more targeted and effective training programs.

Table 3.
Muscle Strength Test Results

Test type	Gender	Category	(n)	(%)
Rings Hold Test	Male	Moderate	2	66,7%
		Poor	1	33,3%
Rope Climb Test	Female	Good	2	66,7%
		Moderate	1	33,3%
Over-grip Pull-up Test	Male	Poor	2	66.7%
		Very Poor	1	33.3%
	Female	Moderate	2	66.7%
		Poor	1	33.3%
Handstand Push-up Test	Male	Poor	3	100%
Push-up Test	Female	Good	3	100%

Based on Table 3, the results of the Rings Hold Test indicate that 2 male gymnasts (66.7%) are in the moderate category, while 1 gymnast (33.3%) falls into the poor category, suggesting that upper body strength and muscular endurance are not yet optimal. In contrast, the Rope Climb Test shows that 2 female gymnasts (66.7%) are in the good category and 1 gymnast (33.3%) is in the moderate category, indicating relatively better upper body strength and endurance among female gymnasts, although some variability still exists. Furthermore, the Over-grip Pull-up Test reveals that male gymnasts are predominantly in the poor (66.7%) and very poor (33.3%) categories, while

female gymnasts are mostly in the moderate (66.7%) and poor (33.3%) categories. These findings indicate that pulling strength and grip strength, particularly among male athletes, still require significant improvement due to limited strength in the shoulder, upper arm, and forearm muscles.

In addition, the Handstand Push-up Test shows that all male gymnasts (100%) are in the poor category, indicating low shoulder strength and limited ability to support body weight in inverted positions, which are essential in artistic gymnastics. Conversely, the Push-up Test results demonstrate that all female gymnasts (100%) are in the good category, reflecting well-developed shoulder and abdominal muscle strength that supports body stability and control during movement. Overall, these findings highlight an imbalance in strength development between male and female gymnasts, particularly in upper body and core stability. Therefore, targeted training programs focusing on upper body strength, grip endurance, shoulder stability, and core control such as handstand holds and resistance-based exercises are strongly recommended to improve overall performance.

Table 4.
Power and Speed Test Results

Test type	Gender	Category	(n)	(%)
Jump Test	Male	Excellent	1	33.3%
		Good	1	33.3%
		Moderate	1	33.3%
	Female	Good	2	66.7%
		Moderate	1	33.3%
Sprint Test (18.29 m)	Male	Moderate	2	66.7%
		Poor	1	33.3%

Based on Table 4, the Jump Test results for male gymnasts show variation, with 1 gymnast (33.3%) in each category excellent, good, and moderate while among female gymnasts, 2 gymnasts (66.7%) are in the good category and 1 gymnast (33.3%) is in the moderate category. In addition, the results also indicate that 2 female gymnasts (66.7%) are in the moderate category and 1 gymnast (33.3%) is in the poor category, suggesting that speed and lower limb strength still require further improvement. Overall, these findings indicate that lower limb explosive power among female gymnasts tends to be more consistent compared to male gymnasts, although limitations in acceleration and force production are still evident and may affect the ability to perform fast and explosive movements.

Table 5.
Core Stability and Body Control Test Results

Test type	Gender	Category	(n)	(%)
Hanging Pike Test	Male	Poor	1	33.3%
		Very Poor	2	66.7%
	Female	Poor	1	33.3%
		Very Poor	2	66.7%
Handstand Hold Test	Male	Very Poor	3	100%
	Female	Very Poor	3	100%

Based on Table 5, the Hanging Pike Test results show that 2 male gymnasts (66.7%) are in the very poor category and 1 gymnast (33.3%) is in the poor category, with the same distribution found among female gymnasts, where 2 gymnasts (66.7%) are in the very poor category and 1 gymnast (33.3%) is in the poor category. In addition, the Handstand Hold Test results indicate that all male and female gymnasts (100%) are classified in the very poor category. These findings show that the results of both tests are dominated by the poor and very poor categories across both male and female gymnasts.

Table 6.
Flexibility Test Results

Test type	Gender	Category	(n)	(%)
Shoulder Flexibility Test	Male	Good	2	66.7%
		Moderate	1	33.3%
	Female	Excellent	1	33.3%
		Moderate	2	66.7%
Split Test	Male	Excellent	2	66.7%
		Moderate	1	33.3%
	Female	Moderate	3	100%

Based on Table 6, the Hanging Pike Test results show that 2 male gymnasts (66.7%) are in the very poor category and 1 gymnast (33.3%) is in the poor category, with a similar pattern observed among female gymnasts, where 2 gymnasts (66.7%) are in the very poor category and 1 gymnast (33.3%) is in the poor category. In addition, the Handstand Hold Test indicates that all male and female gymnasts (100%) fall into the very poor category. These findings demonstrate that the performance of both male and female gymnasts is predominantly concentrated in the poor and very poor categories, with no athletes reaching moderate or higher levels in these tests.

Table 7.
Agility and Balance Test Results

Test type	Gender	Category	(n)	(%)
Agility Test	Male	Excellent	3	100%
	Female	Excellent	1	33.3%
		Good	2	66.7%
Star Excursion Balance Test	Male	Excellent	2	66.7%
		Good	1	33.3%

Based on Table 7, the results show that all male gymnasts (100%) are in the excellent category in the Agility Test, while among female gymnasts, 1 athlete (33.3%) is in the excellent category and 2 athletes (66.7%) are in the good category. In addition, the Star Excursion Balance Test indicates that 2 male gymnasts (66.7%) are in the excellent category and 1 gymnast (33.3%) is in the good category. These findings indicate that agility and balance abilities among male gymnasts are predominantly at an excellent level, while female gymnasts generally demonstrate good to excellent performance. Overall, agility, balance, and lower extremity control in both groups are relatively well developed, with male gymnasts showing more consistent results in the excellent category.

Overall, the results show variation across different components of physical condition. While some components have reached good categories, others remain in moderate to very poor categories. This gap highlights that the gymnasts physical

readiness is not yet fully integrated, as certain capacities are developed in isolation rather than in balance. Such a pattern may limit the effectiveness of skill execution, which depends on the coordination of multiple physical abilities. Therefore, training should be more systematically structured to address weaker components while ensuring balanced development across all physical aspects.

Discussion

Physical condition is a fundamental factor that greatly determines an athlete's success in achieving optimal performance, particularly in artistic gymnastics, which requires a combination of strength, flexibility, balance, coordination, and power simultaneously (Triyasari et al., 2016). Based on the results of the study, it is known that, in general, the level of physical condition of junior artistic gymnasts in the Semarang city Special Sports Class, both male and female, falls into the moderate category. This indicates that the athletes' physical abilities are already at a sufficient level, but have not yet reached optimal conditions to support maximum performance in competitions. In other words, the athletes' physical condition is still in a developmental stage and requires more targeted improvement. When compared to the ideal condition in artistic gymnastics, an athlete should have a level of physical condition that falls into the good to excellent category across all components. This is due to the characteristics of artistic gymnastics, which demand complex and integrated physical abilities, where weakness in one component can affect the overall quality of movement performance. Therefore, the study results showing the dominance of the moderate category indicate a gap between athletes' actual condition and the ideal condition expected in this sport. When examined in more detail, the results show variations in the achievement of each physical condition component. In male athletes, several components such as agility (Agility Test), hip flexibility (Splits Test), and balance (Star Excursion Balance Test) are already in the good to excellent categories. This indicates that the training program provided has been sufficiently effective in developing movement coordination, flexibility, and balance. These findings are in line with previous research stating regular gymnastics training tends to improve flexibility and coordination more quickly than strength components (Noviyandri et al., 2025).

However, several components are still in the poor to very poor categories, such as abdominal muscle strength (Hanging Pikes Test), shoulder muscle strength (Handstand Push-up Test), and grip and pulling strength (Over-grip Pull-up Test). This condition indicates an imbalance in the development of physical condition, particularly in core muscle strength and upper extremities. Theoretically, these components are the main foundation in artistic gymnastics because they play a role in supporting all movements, such as handstands, rings, and various static and dynamic movements (Mirwansyah, 2020). Therefore, the low achievement in these components may become a limiting factor in improving athletes' technical abilities. A similar pattern is also observed in female athletes. Several components such as power (Jump Test), agility (Agility Test),

and shoulder and abdominal muscle strength (Push-up Test) are already in the good category. However, most other components are still in the moderate category, and some components such as abdominal muscle strength and the ability to maintain a handstand position (Handstand Hold Test) are in the very poor category. This indicates that although female athletes have relatively good basic abilities, there are still weaknesses in core strength and body stability. These findings are also supported by research by (Yuza et al., 2018)., which states that core muscle strength has a significant relationship with balance and movement control in artistic gymnastics. In addition, when linked to previous studies, these results show a similar tendency, namely an imbalance in the development of physical condition components in young athletes. Research by (Putri et al., 2025). Shows that during adolescence, the development of physical condition is still uneven due to factors such as growth, training adaptation, and differences in training stimuli received. This strengthens the finding that the dominance of the moderate category in this study is a condition that commonly occurs in junior athletes.

The results of this study also emphasize that an athlete's physical condition is an interconnected system that must be developed comprehensively. Imbalance between physical condition components not only affects performance decline but also has the potential to increase the risk of injury (Agus, 2019). In this context, the use of the GFMT test has been proven to provide a comprehensive overview of athletes' physical condition profiles, enabling coaches to identify more specifically which components require greater attention (Herlambang et al., 2020). The dominance of the moderate category in this study may also be influenced by several factors, such as the athletes' age, which is still in the developmental stage (13–15 years), relatively limited training experience, and the possibility that training programs are still more focused on technical aspects rather than overall physical condition development. At this stage, athletes are still in the basic to intermediate training phase, so improving physical condition requires a gradual, systematic, and continuous training approach (Asri & Wijaya, 2021).

Based on these findings, it is necessary to design a more targeted training program based on measurement data. The training program should not only maintain the components that have already developed but also specifically target improvements in core muscle strength and upper extremities through resistance-based and functional training. In addition, the application of training principles such as individualization, overload, progression, specificity, and variation is important to ensure optimal physical condition development. With the availability of physical condition profile data obtained from this study, coaches have a more objective basis for designing training programs that are tailored to the needs of each athlete. Thus, it is expected that there will be a more even and optimal improvement in physical condition, which in turn can support improved performance and achievements of junior artistic gymnasts in the Semarang city Special Sports Class in the future.

CONCLUSION

Based on the research results and discussion, it can be concluded that the physical condition of the male and female junior artistic gymnasts in the Semarang Special Sports Class in 2026 is generally in the moderate category. Of the 10 components of physical condition assessed for male gymnasts, only four were categorized as excellent: agility, hip flexibility, balance, and lower extremity muscle control. Meanwhile, the good components were shoulder flexibility and explosive power. The moderate components were upper extremity muscle strength and endurance to support body weight. The shoulder muscle strength and endurance, balance, abdominal and back muscle control, and specific components involved in pulling movements, as well as grip strength, were categorized as poor. The abdominal muscle strength and shoulder muscle strength and balance with the head down were categorized as very poor. Of the 10 components of physical condition assessed for female gymnasts, four components were categorized as good: core body control, explosive power, agility, and shoulder and abdominal muscle strength. The moderate category includes shoulder and hip flexibility, grip strength, and upper extremity strength specifically involved in pulling movements, and speed. The very poor category includes abdominal muscle strength and shoulder muscle strength and balance with the head down.

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