

Artistic Gymnastics Talent Identification Among Young Children in the Special Region of Yogyakarta, Indonesia

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ABSTRACT: Artistic gymnastics is a sport that combines strength, flexibility, balance, coordination, and the aesthetics of movement, thus requiring a talent identification process starting at an early age to support long-term performance development. The Yogyakarta Special Region branch of the Indonesian Gymnastics Association (PERSANI), as a partner in this initiative, places great emphasis on the development of young athletes but does not yet have a standardized, data-driven talent identification system. This Community Service (PKM) activity aims to identify artistic gymnastics talent in early childhood and to compile a database of anthropometric and biomotor profiles that can be used as a reference for the ongoing development of athletes. The study involved 66 children aged 6 - 9 years from Sleman, Bantul, Gunungkidul, and Kulon Progo Regencies, as well as the City of Yogyakarta, all of whom had been participating in artistic gymnastics training for at least one year. The instruments used included anthropometric tests such as height, weight, arm span, sitting height, leg length, chest circumference, hip circumference, and body mass index (BMI) as well as biomotor tests consisting of the sit-and-reach test, right and left front splits, bridge pose, balance, push-ups, sit-ups, chin-ups, standing long jump, and agility. The data were analyzed using quantitative descriptive methods, including frequency distributions and percentages. The results of the assessment showed that 2 children (3.03%) fell into the "highly gifted" category, 31 children (46.97%) into the "gifted" category, 31 children (46.97%) into the "moderately gifted" category, and 2 children (3.03%) into the "less gifted" category. The results of this activity indicate that the majority of participants have good potential for development in the sport of artistic gymnastics. Additionally, this activity produced a database of anthropometric and biomechanical profiles that can be utilized by PERSANI the Special Region of Yogyakarta as a foundation for talent scouting, training program planning, and the development of young athletes' performance in a more objective, systematic, and sustainable manner.

KEYWORDS: Identification, Test Results, Talent, Early Childhood, Artistic Gymnastics.

INTRODUCTION

Artistic gymnastics is a highly disciplined sport that combines elements of acrobatics, strength, flexibility, and aesthetics. Athletes perform short sequences of movements on specialized apparatus designed to test body control and courage through complex movement coordination (Herman Chaniago et al., 2024). Etymologically, artistic gymnastics originates from a discipline that prioritizes the beauty of movement (art) and physical skill. Theoretically, artistic gymnastics is defined as a structured physical activity using apparatus that demands the integration of muscular strength, explosive power, flexibility, and dynamic balance. This sport is a form of self-body-weight resistance, in which the athlete's primary load is their own body weight.

Currently, partners are highly enthusiastic about the development of sports for young children, but the talent identification process remains general in nature (Aziz Muhamad Gunawan et al., 2023). Children aged 6–9 are in their "golden age," a phase during which their nervous systems and physical flexibility are highly adaptable to gymnastics movements. However, this potential is often viewed merely as ordinary play, without any specific assessment to determine whether a child possesses the physical attributes such as arm strength or spinal flexibility required to become a professional artistic gymnast.

Based on discussions and observations, the main problems faced by partners include the lack of standardized talent assessment tools, resulting in the identification of children's talent being based solely on visual observation, which is often inaccurate (K.S. Setiawan et al., 2020). There is also a lack of understanding that artistic gymnastics requires early identification before puberty to ensure that training begins in a timely manner. Without clear talent mapping, the training programs provided

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are often not on target, resulting in slow progress in the children's performance and a high risk of athlete dropout (Ahmad Zaeri Sya'rani et al., 2020).

The PERSANI Regional Chapter of the Special Region of Yogyakarta, which serves as a partner in this Community Service Program (PKM), has various characteristics and circumstances that need to be understood. PERSANI DIY has authority over athlete development, the coordination of gymnastics clubs, and the organization of competitions at the regional level. Yogyakarta itself is known as a potential hub for national gymnastics talent, giving this partner significant leverage within the competitive sports system. PERSANI DIY places great emphasis on grassroots development; it oversees various gymnastics clubs that train children from preschool through elementary school. Despite having a large number of athletes, PERSANI DIY still faces challenges in scientifically and systematically documenting the physical profiles (anthropometric and biomechanical data) of novice athletes (Budi D.R. et al., 2021). There is an urgent need for coaches under the auspices of PERSANI DIY to update their knowledge of data-driven talent scouting, so that the process of promoting and demoting athletes at the regional training camp becomes more objective.

The purpose of this aptitude test is to establish a database of anthropometric and biomotor profiles for young children that can serve as a reference for long-term performance development and generate standardized physical and motor data profiles. This data serves as a track record that facilitates the continuous monitoring of athletes' development.

METHOD

This Community Service (PKM) activity was carried out to identify artistic gymnastics talent among young children in the Special Region of Yogyakarta (DIY). The activity aimed to identify potential talent in artistic gymnastics as a foundation for a more focused and sustainable process of developing young athletes. The implementation of the activity involved the Indonesian Gymnastics Association (PERSANI) of the Special Region of Yogyakarta as a partner responsible for coordinating with regency/city officials and gymnastics clubs, preparing participants, and supporting the administration of artistic gymnastics talent tests.

The participants in this activity were young children from five regencies and cities in the Special Region of Yogyakarta: Sleman Regency, Bantul Regency, Gunung kidul Regency, Kulon Progo Regency, and Yogyakarta City. The criteria for participants in the talent test were that they be between 6 and 9 years old and have been training in artistic gymnastics for at least one year. Based on these criteria, a total of 66 children took part in the series of talent tests organized as part of this community service activity.

The talent identification instruments used consist of anthropometric and biomotor tests. Anthropometric measurements include height, weight, arm span, sitting height, leg length, chest circumference, hip circumference, and Body Mass Index (BMI). Meanwhile, the biomotor tests include the sit-and-reach test, right and left front splits, the bridge pose, balance, push-ups, sit-ups, chin-ups, the standing broad jump, and agility tests. These components were selected because they represent the physical characteristics and biomotor abilities that support high performance in artistic gymnastics.

The testing process began with participant registration and administrative checks, followed by anthropometric measurements and biomotor tests in accordance with established procedures. All measurements were conducted by an implementation team consisting of faculty members and support staff who were familiar with the procedures for conducting artistic gymnastics aptitude tests. The results of each component's measurements were then converted into scores based on the artistic gymnastics aptitude identification norms used in this activity.

Data analysis was conducted using a quantitative descriptive approach. The results of the anthropometric and biomotor tests were processed to obtain each participant's total aptitude score, which was then grouped into four categories: highly gifted, gifted, moderately gifted, and less gifted. Next, the frequency and percentage for each category were calculated using the percentage formula, $P = (f/N) \times 100\%$, where P is the percentage, f is the number of participants in each category, and N is the total number of participants.

RESULTS

A total of 66 young children were included in the sample. Based on the results of the data analysis from the artistic gymnastics aptitude test, the following category distribution was obtained:

Category	Count (n)	Percentage (%)
Highly Talented	2	3,0
Talented	31	46,9
Quite Talented	31	46,9
Less Talented	2	3,0
Total	66	100,00

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Based on the results of artistic gymnastics aptitude tests administered to 66 young children, it was found that the “gifted” and “moderately gifted” categories were equally represented, each comprising 31 children, or 46.97% of the total sample. Meanwhile, the “highly gifted” and “less gifted” categories were each represented by only 2 children, or 3.03%.

The results show that the majority of children are at the intermediate to advanced skill level in artistic gymnastics aptitude indicators. These findings suggest that most participants have sufficient potential to be developed through systematic and sustained training programs. On the other hand, the number of children classified as highly gifted is still relatively small, so broader identification efforts are needed to discover potential athletes with superior physical and biomotor characteristics.

DISCUSSION

The findings of this test indicate that the majority of participants fall into the “gifted” and “fairly gifted” categories. This suggests that the children already possess the basic abilities necessary to excel in artistic gymnastics, such as appropriate anthropometric proportions, flexibility, muscle strength, coordination, balance, and agility all of which are key components of the sport of artistic gymnastics.

The relatively high percentage of athletes in the “talented” category (46.97%) indicates the presence of athletes who can be prioritized in advanced training programs. Children in this category possess physical characteristics and biomotor abilities that are relatively well-suited to the demands of artistic gymnastics, giving them the potential to develop into high-performing athletes if they receive well-planned and consistent training. Meanwhile, the fact that a significant proportion of children (46.97%) fall into the “moderately talented” category indicates that they possess good basic potential but still need to improve in certain areas of physical ability and motor skills. Appropriate training at an early age is crucial because children’s motor skills are still at an optimal stage for development.

The percentage of children classified as highly gifted is only 3.03%. Although this number is small, this group represents potential candidates who could be the focus of long-term performance development. The characteristics of this group show a high degree of alignment with the profile of the ideal artistic gymnast. Conversely, the “less talented” category was found in only 3.03% of the participants. These results indicate that the majority of children already possess adequate basic skills to participate in artistic gymnastics training. However, talent identification results should not be used as the sole basis for determining an athlete’s success, as factors such as training, motivation, environment, family support, and training opportunities also play a significant role in the development of athletic performance.

CONCLUSION

Based on the results of artistic gymnastics aptitude tests administered to 66 young children in the Special Region of Yogyakarta, the majority of participants fell into the “gifted” and “moderately gifted” categories, each accounting for 46.97%. The “highly gifted” and “less gifted” categories each accounted for only 3.03%. These findings indicate that most children have sufficient potential to be developed in the sport of artistic gymnastics through structured and sustained training programs.

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