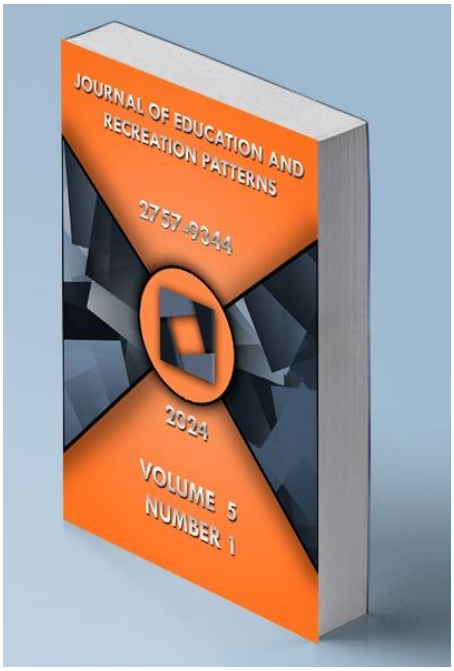

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Determination of Anaerobic Power, Agility and Some Physical Characteristics of Turkish Elite Greco-Roman Style Young Wrestlers

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Determination of Anaerobic Power, Agility and Some Physical Characteristics of Turkish Elite Greco-Roman Style Young Wrestlers

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ABSTRACT
Anaerobic power, agility and owned physical characteristics are the most important characteristics that determine sportive success and performance in wrestling. In this study, these characteristics of Turkish Elite Greco-Roman Style Young Wrestlers were determined. Because better preparation of the training programs to increase the performance of the athlete depends on determining the athlete profile in the best way in advance and creating it based on a scientific method. Determining the anaerobic power and agility characteristics of wrestlers will be one of the most important data in predicting their sports performance. 37 elite Greco-Roman style young wrestlers who have achieved success at national and international level participated in the research. The findings obtained because of this study will also contribute to the revision of the wrestlers' training programs. Average age of the athletes is 18.6±1 Years, their body weight is 76±16.1 Kg., their height is 175±1 cm., their body fat percentage is 10.8±4.6, and their body mass index is 24.8±3.8 kg/m2. In the made Wingate Test, the highest anaerobic power for the arm was 9.95±2.51 w/kg, and the average was 4.68±0.7 w/kg. The same measurements were determined as 14.68±2.52 w/kg at the highest and 7.17±0.8 w/kg on average for the leg. Illinois agility test result was found 15.9±0.8 sec. With these results, it has been observed that the measured performance values of Turkish elite Greco-Roman style young wrestlers are above the average and are consistent with the studies found in the literature.

Keywords: Agility, Anaerobic Power, Greco-Roman Style Wrestling

INTRODUCTION

One of the most compelling sports in the world is wrestling. Wrestling attracts the attention of almost all countries in the world, both with its historical origins and its place among Olympic sports branches. In addition to being based on struggle and contact, it also requires many physical and physiological characteristics (Gökdemir et al., 1999). The most important components of physical fitness in wrestling are strength, speed, agility, flexibility, balance, muscular and cardiovascular endurance. Agility, another critical component in wrestling, enables athletes to change direction quickly and effectively, which is vital for both offensive and defensive maneuvers. Agility is closely linked to the ability to change position rapidly, highlighting its importance in the dynamic nature of wrestling matches (Terbizan, 1996). It also exhibits both aerobic and anaerobic properties in terms of the energy systems used during physical activity. It can be said that anaerobic energy requirement is dominant. Given the importance of various physical and physiological characteristics in wrestling, it's clear that a well-rounded training program is crucial for athlete development and success. These programs must be tailored to the specific needs and characteristics of wrestlers, including their strength, speed, agility, flexibility, balance, muscular and cardiovascular endurance (Kutlu & Cicioğlu, 1995). In addition, agility features are at the forefront in both offensive and defensive activities. In sports-related research, the relationships between body structure and functions of body parts have been the subject of various studies. Physiological and psychological characteristics, physical performance capacity and anthropometric characteristics are important factors in achieving success in sports branches (James, 2009). In order to increase athlete performance, well-prepared training programs are needed. For well-prepared training programs, the athlete profile must be determined in advance or at any stage of the program and created based on a scientific method. Because evaluating individuals or groups within physical fitness parameters requires basic physical fitness information about the group or person examined (Carlson & Naughton, 1994). The assessment of anaerobic power, agility, and various physical characteristics in elite Greco-Roman style young wrestlers is a critical area of study to comprehend the physiological demands and performance factors in this sport. Research has indicated that successful wrestlers demonstrate high anaerobic power and capacity, muscular strength, aerobic power, flexibility, fat-free mass, and a mesomorphic somatotype (Ramírez-Vélez et al., 2014). Studies have specifically emphasized the importance of absolute and relative anaerobic power, as well as anaerobic capacity, in predicting wrestling performance (García-Pallarés et al., 2011). Additionally, isometric strength has been recognized as a significant physical characteristic for athletes, including wrestlers (Herold et al., 2018). In the realm of wrestling, mental attributes such as sports courage and attitudes towards the sport have been associated with athletic mental energy, suggesting a positive correlation between attitudes towards wrestling and mental energy (İslam, 2022). Furthermore, comparisons of physical fitness traits among different national wrestling teams have provided insights into the distinct characteristics of elite wrestlers from various regions (Rahmani & Mirzaei, 2019). Understanding the specific physical strength requirements, such as upper-limb pull power and power endurance, in female wrestlers at different competitive levels can offer valuable insights into the sport (Naka et al., 2022). Wrestling, renowned for its high-intensity interval efforts, depends on factors such as cardiorespiratory fitness, anaerobic performance, strength, and muscle power to impact competitive performance (Francino et al., 2022). Moreover, research has demonstrated that strength-power tests, when conducted after exhaustive exercise, can effectively differentiate between top-elite and elite wrestlers (Özbay & Ulupınar, 2021). The impact of morphological characteristics on wrestlers' readiness and physical fitness underscores the significance of adopting a holistic approach to training and performance in wrestling (Marković et al., 2022). Additionally, the assessment of the relationships between physical and motor features of young wrestlers from Turkey has provided valuable insights into the

interplay between physical characteristics and athletic performance (Acar & Özer, 2020). And in the study conducted by Şahin and Uzun (2023), it was determined that an 8-week preparatory program applied to elite wrestlers positively affected values such as body fat percentage, lean body mass, and MaxVo2. The literature on agility and physical characteristics in wrestlers underscores the multifaceted nature of factors influencing performance in the sport. Also, studies have highlighted the importance of anaerobic power in distinguishing between successful and less successful wrestlers, emphasizing its significance in executing high-intensity techniques effectively Jakovljević et al. (2018). Research has shown that anaerobic power is essential in wrestling due to the need for short-duration, high-intensity performances during matches. The Wingate Anaerobic Test has been utilized to assess the maximum power output of wrestlers, reflecting their ability to generate explosive strength and power during bouts (Deliceoğlu et al., 2022). Additionally, studies have indicated that anaerobic power and capacity are critical indicators of achieving high-level success in wrestling, underscoring the importance of these physiological factors in the sport (He et al., 2013). The physiological profile of elite wrestlers has been a subject of investigation, with studies revealing significant differences in absolute anaerobic leg power and relative anaerobic power of the arms and legs between elite wrestlers and their less successful counterparts (Mirzaei et al., 2016). Furthermore, the trainability of body composition, aerobic power, and muscular endurance in cadet wrestlers has been explored, demonstrating the positive effects of training programs on strength, aerobic capacity, flexibility, and anaerobic power in young athletes (Özer, 2019). The impact of acute muscular fatigue on static and dynamic balance performances in elite wrestlers has been studied, highlighting the importance of maintaining anaerobic capabilities and power even under conditions of fatigue (Farzad et al., 2011). Moreover, the addition of a sprint interval training program to wrestling training has been shown to improve both aerobic and anaerobic performances in trained wrestlers, emphasizing the benefits of incorporating varied training modalities to enhance physiological capacities. In conclusion, anaerobic power stands out as a critical factor in the performance of wrestlers, influencing their ability to execute explosive techniques and maintain high-intensity efforts during matches. Therefore, anaerobic power stands out as a critical factor in the performance of wrestlers, influencing their ability to execute explosive techniques and maintain high-intensity efforts during matches.

Despite extensive research on the physical and physiological demands of wrestling, there remains a lack of comprehensive studies specifically targeting the elite young Greco-Roman wrestlers in Turkey. Most studies have either focused on general wrestling populations without distinguishing between styles and age groups or have not holistically assessed the interplay between anaerobic power, agility, and other physical characteristics in relation to performance outcomes. This study aims to fill this gap by focusing on a specific, yet crucial segment of the wrestling population, providing insights into their unique physical fitness profiles and performance determinants.

Given the high intensity and specific demands of wrestling, especially the Greco-Roman style, identifying these key performance indicators is crucial for optimizing athlete development, performance, and injury prevention strategies. This research is particularly important as it provides a focused analysis on young athletes, contributing to the body of knowledge that can inform early-stage training adaptations and specialization in wrestling.

The primary aim of this study is to determine the anaerobic power, agility, and some physical characteristics of Turkish elite Greco-Roman style young wrestlers, thereby providing a detailed physiological profile of these athletes. By identifying the key physical attributes that correlate with successful performance in this specific wrestling style, the study seeks to contribute to the optimization of training and preparation methods for these athletes.

METHOD

Research Design

In this study, cross-sectional research design was used in the quantitative research model, which is one of the scientific research techniques. Quantitative studies are studies aimed at determining the countable, measurable and increasing or decreasing status of something. Cross-sectional studies are the examination of data collected from a specific experimental group at a specific time (Karasar, 2023).

This study was conducted with the approval of Kırıkkale University Non-invasive Research Ethics Committee dated 31.01.202 and numbered 2024.01.28.

Research Group

The research group of this study consisted of 37 elite young wrestlers of the Groco-Roman style. These wrestlers are those who have achieved success at national or international levels and who have been invited to the Turkish Greco-Roman Style Youth National Team Candidate Squad in 2024 and who want to voluntarily participate in the tests. The athletes were informed about the tests, measurements and test protocols to be applied, and the athletes were given the opportunity to warm up and try the test batteries before the tests.

This study is limited to Young Elite Greco-Roman Style Wrestlers invited to the U-20 Turkish National Team in 2024.

Data Collection Tools & Process

Applied Tests:

1- Wingate Test

Wingate anaerobic test (WanT) is one of the tests to determine anaerobic property, which can provide information about both the lactacid (average power) and alactacid (peak power) components of anaerobic performance (Inbar & Baror, 1986). It can be applied to the upper extremities as well as the lower extremities in people with physical fitness level (Duche & et al., 2002).

Regarding the test-retest reliability of WanT, the reliability coefficient of WanT in children and young adults was found to be between 0.95 and 0.97 (Bar-or, 1987). In the tests performed with the leg, a weight corresponding to 7.5% of each subject's body weight was used, and in the tests performed with the arm, a resistance weight corresponding to 5.5% of the subject's body weight was used during the test (Wozniak et al., 2004; Inbar et al., 1996).

A warm-up opportunity was provided before the test and the athletes were given the opportunity to try the test battery to get to know them. Necessary suggestions were also made to the athletes not to decrease their performance during the test.

The most important reason why Wingate anaerobic power test was preferred as the anaerobic power test in this study: Since the arms and legs are used more in wrestling sports.

2- Illinois Agility Test

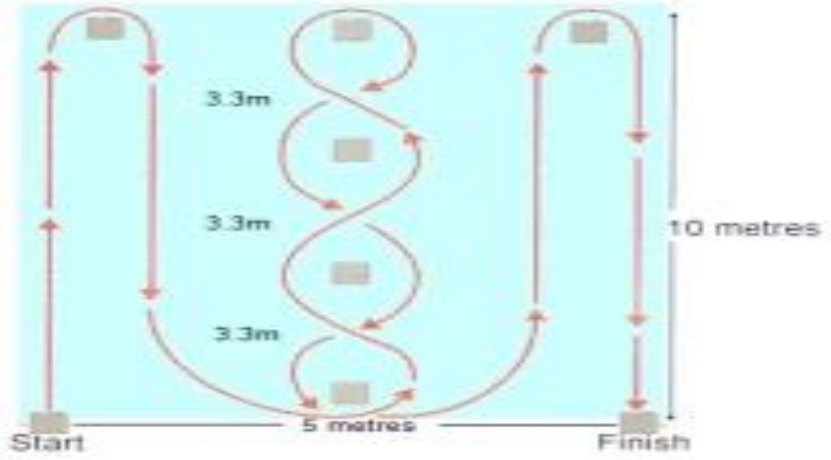
A test track consisting of three cones arranged in a straight line with 3.3 m intervals is established in the middle section of a track with a width of 5 m and a length of 10 m. The test consists of a 40-m flat run and a 20-m slalom run between cones, with 180 º turns every 10 m. After the test track is prepared, a two-door photocell electronic chronometer system that measures the start and end with an accuracy of 0.01 seconds is placed. The time to complete

the course is recorded in seconds. The test is repeated twice with full rest, and the best value is recorded (Miller et al., 2006).

A warm-up opportunity was provided before the test and the athletes were given the opportunity to try the test battery to get to know them. Necessary suggestions were also made to the athletes not to decrease their performance during the test.

The reason why the Illinois agility test was preferred as the Squat test in this study is that the test protocol is easy and understandable and the international norm values for this age group are available in the literature. In this way, it will be possible to compare Turkish Elite Greco-Roman wrestlers with international norm values.

Illinois Agility Testing Protocol: (Source: http://www.brianmac.co.uk/illinois.htm)



Illinois Agility Test 16-19 Age Norm Values: (Source:http://www.brianmac.co.uk/illinois.htm)

Gender	Excellent	Above Average	Average	Below Average	Poor
Male	<15.2 secs	15.2 - 16.1 secs	16.2 - 18.1 secs	18.2 - 19.3 secs	>19.3 secs
Female	<17.0 secs	17.0 - 17.9 secs	18.0 - 21.7 secs	21.8 - 23.0 secs	>23.0 secs

Some Physical Characteristics

Scales, ultrasonic height meter and Tanita Body Composition Analyzer TBF – 418 Japan" bioelectric impedance analyzer were used for body weight, height and body fat percentage measurements. Body Mass Index is calculated by dividing body weight by height squared (Finucane et al., 2011).

Data Analysis

All data were first organized in the Excel (Microsoft Excel 2007 Version) program, and the Weighted Average, Standard Deviation, Maximum and Minimum values in the descriptive tables were obtained from the SPSS (IBM SPSS Version 26) program.

FINDINGS

In the Findings section of the article, detailed quantitative data and analysis from three distinct measurement approaches are presented, focusing on evaluating the physical, anaerobic power, and agility characteristics of Turkish elite Greco-Roman style young wrestlers.

Table 1

The Names of the Universities and Units in the Central Anatolia Region, which constitute the population of the study, Providing Sports Education/Receiving Students

Physical Specifications	WA.	SD.	Min.	Max.
Body Weight (Kg)	76	±16,1	55	110
Height (cm.)	175	±1	150	190
Body Fat Percentage (%)	10,8	±4,6	5,6	21,3
Body Mass Index (Kg/m2)	24,8	±3,8	24,4	30,4
Age (Year)	18,6	±1	17	20

In the physical test measurements, the wrestlers' average body weight was determined as 76 kg, their average height was 175 cm and their average age was 18.6 years. In addition, their body fat percentage was determined as 10.8% and their body mass index was 24.8 kg/m2.

Table 2

Wingate Anaerobic Power Measurement Results of Turkish Elite Greco-Roman Style Young Wrestlers

Wingate Test Results	WA.	SD.	Min.	Max.
Peak Power (For Arm) W/Kg	9,95	±2,51	3,80	14,25
Peak Power (For Leg) W/Kg	14,68	±2,52	9,75	18,30
Average Power (For Arm) W/Kg	4,68	±0,7	2,70	5,50
Average Power (For Leg) W/Kg	7,17	±0,8	5,35	8,45

In the anaerobic power test measurements, the peak power for the leg was determined as 14.68 W/Kg and the average power was 7.17 W/Kg, while the peak power for the arm was determined as 9.95 W/Kg and the average power was 4.68 W/Kg.

Table 3

Illinois Agility Test Measurement Results of Turkish Elite Greco-Roman Style Young Wrestlers

Illinois Test Results	WA.	SD.	Min.	Max.
Agility Test (sec.)	15,9	±0,8	15,1	16,7

In the agility test, it was determined that the wrestlers completed the Illinois agility test protocol in an average of 15.9 seconds.

DISCUSSION & CONCLUSION

In the discussion of the findings from this study, it is important to contextualize the results within the broader scope of sports science and specifically within the realm of wrestling performance metrics. The study aimed to delineate the anaerobic power, agility, and physical characteristics of Turkish elite Greco-Roman style young wrestlers, providing a comprehensive overview that can inform training and development strategies for this specific athletic population.

The first finding of this study was that the physical test measurements revealed valuable information about the physical characteristics of Turkish elite Greco-Roman style youth wrestlers. The average body weight of the wrestlers was 76 kg, the average height was 175 cm and the average age was 18.6 years. In addition, their body fat percentage was found to be 10.8% and their body mass index was found to be 24.8 kg/m². These findings align with existing literature on the physical attributes of successful wrestlers. Studies have shown that wrestlers often exhibit specific body composition characteristics, including moderate body weight, height, and body fat percentage, which are conducive to optimal performance in the sport García-Pallarés et al. (2011). The results obtained from the physical measurements of the wrestlers in this study are consistent with previous research that emphasizes the importance of body composition in wrestling performance. Studies have highlighted the significance of maintaining an optimal body weight and composition to enhance agility, strength, and overall athletic performance in wrestlers (Kuźmicki et al., 2023). Furthermore, the relationship between body mass reduction and anaerobic power in wrestlers has been explored, indicating the impact of body weight management on physical characteristics and performance outcomes (Sarshin et al., 2021). Moreover, the findings from the physical tests align with research on the trainability of body composition and physical fitness traits in wrestlers. Studies have demonstrated that targeted training programs can lead to improvements in strength, aerobic capacity, flexibility, and anaerobic power in young athletes, contributing to enhanced performance on the mat (Farzad et al., 2011). The physical characteristics observed in the Turkish elite Greco-Roman style young wrestlers in this study reflect the importance of maintaining a balance between body weight, composition, and physical fitness to excel in the sport. In conclusion, the physical test measurements conducted in this study provide valuable insights into the physical characteristics of Turkish elite Greco-Roman style young wrestlers. The consensus within sports science literature supports the idea that a lower body fat percentage can contribute to higher efficiency in strength and power-based sports by optimizing the power-to-weight ratio, which is particularly important in weight-class sports like wrestling. Moreover, the BMI falls within the range that is often associated with athleticism, providing further evidence of the wrestlers' physical fitness and their suitability for the sport.

The second finding of this study was the peak power data obtained from the leg and arm measurements of Turkish elite young wrestlers with values of 14.68 W/kg and 7.17 W/kg for leg and 9.95 W/kg and 4.68 W/kg for arm, respectively. These findings are consistent with existing literature on the importance of anaerobic power in wrestling performance. Studies have highlighted that higher absolute and relative values of maximal strength, muscle power, and anaerobic metabolism can provide elite wrestlers with a competitive advantage during matches García-Pallarés et al. (2011). The peak power data observed in this study align with research on the physiological and performance changes resulting from specific training programs in wrestlers. Previous studies have utilized Wingate tests to assess peak and mean power output, reflecting the athletes' ability to generate explosive strength and power, essential for executing high-intensity techniques in wrestling (Farzad et al., 2011). The peak power values obtained for the leg and arm muscles of the Turkish elite Greco-Roman style young wrestlers are indicative of their anaerobic power capacity, which is crucial for quick and forceful movements

required in wrestling bouts. Furthermore, the findings from the peak power measurements in this study are in line with research on the identification of success factors in elite wrestlers. Wrestling-specific training programs have been shown to effectively monitor athletes' preparedness by controlling vital indicators such as anaerobic power and strength endurance, which are essential for optimal performance in the sport (Cieśliński et al., 2021). The disparity between leg and arm power outputs reflects the sport-specific demands of wrestling, where leg strength is paramount for executing effective takedowns, maintaining stability, and generating forceful movements. This finding aligns with previous research indicating the importance of leg power in wrestling performance, highlighting the need for targeted leg strength and power training in wrestlers' conditioning programs.

The third finding of this study is that the agility test results of the Turkish elite young wrestlers indicate an above-average agility performance compared to the norm values for individuals aged 16-19 years with an average of 15.9 seconds in the Illinois agility test. These findings shed light on the agility characteristics of the wrestlers and their proficiency in executing quick and precise movements essential for success in wrestling. The agility test results align with existing literature on the importance of agility in wrestling performance. Studies have emphasized the significance of agility in enabling wrestlers to swiftly change direction, evade opponents, and execute tactical maneuvers effectively Deliceoğlu et al. (2022). The agility performance of the Turkish elite Greco-Roman style young wrestlers, as demonstrated by the results of the Illinois agility test, is crucial for their competitive edge in the sport. Research has shown that agility is a key determinant of success in wrestling, enabling athletes to react swiftly to opponents' movements, maintain balance, and execute techniques with precision (Skugor et al., 2023). Furthermore, the relationship between agility and technical skills in wrestling has been explored, highlighting the integral role of agility in enhancing overall performance on the mat (Song et al., 2021). Moreover, the agility test results of the wrestlers in this study are consistent with research on the physical fitness profiles of elite wrestlers. Studies have indicated that successful wrestlers exhibit superior agility, along with other physical attributes such as strength, power, and endurance, which collectively contribute to their competitive advantage (Özbay & Ulupınar, 2021). Agility, as a multifaceted physical attribute encompassing speed, balance, and the ability to change direction swiftly, is integral to wrestling. This performance metric situates the wrestlers within a high proficiency category for agility, suggesting that their training regimens effectively incorporate agility-enhancing drills. This agility level is imperative for the rapid, dynamic movements required in wrestling, facilitating offensive and defensive maneuvers. The consensus among sports performance studies posits that agility is a determinant factor in wrestling success, reaffirming the relevance of agility training in these athletes' preparation.

Conclusion

The comprehensive analysis presented in this study elucidates the significant interplay between physical attributes, anaerobic power, and agility in determining the performance capabilities of Turkish elite Greco-Roman style young wrestlers. This discussion consolidates the understanding of the specific requirements for success in this demanding sport, underpinning the necessity for targeted training and developmental strategies.

The physical characteristics of the wrestlers, characterized by optimal body weight, composition, and BMI, align with the prerequisites for peak performance in wrestling. These findings highlight the importance of maintaining a balance between lean mass and minimal body fat, thereby optimizing the power-to-weight ratio essential for high-level competition. The congruence of these results with existing literature underscores the critical role of body composition in wrestling, advocating for meticulous weight and fitness management within training protocols.

The anaerobic power measurements further delineate the wrestlers' capacity for high-intensity, explosive movements, especially the pronounced leg power essential for effective takedowns and maneuverability. The disparity in power output between legs and arms accentuates the sport-specific physical demands of Greco-Roman wrestling, suggesting a prioritization of lower body strength and power in training regimens. This aligns with the consensus that anaerobic power, particularly in the legs, constitutes a cornerstone of wrestling performance, necessitating dedicated training focus.

Agility findings, as demonstrated through the Illinois agility test, reveal the wrestlers' superior ability to execute quick, precise movements—a testament to their agility training efficacy. This agility is crucial for engaging in the dynamic, high-paced action characteristic of wrestling, enabling athletes to outmaneuver opponents and adapt swiftly to the fluid combat environment. The results reinforce the notion that agility is a critical determinant of success in wrestling, advocating for its continued emphasis in training.

This proficiency in agility not only underscores the athletic capabilities of Turkish young wrestlers but also emphasizes the importance of agility training within their overall athletic development regimen. The consistency of agility performance across various test batteries, as indicated by the literature, suggests that agility is a fundamental skill cultivated within wrestling training programs. Consequently, trainers may continue to prioritize agility drills and exercises to maintain and enhance this aspect of athletic performance among Turkish young wrestlers. Furthermore, future research could delve deeper into the specific training methodologies and techniques employed to further elucidate the factors contributing to the observed agility levels in this population.

In line with the data of this study, coaches and athletes, while making their training programs, can develop training programs that will provide improvement in this direction, especially by being aware that their average anaerobic power is at a lower level than other study findings. It is of great importance to eliminate these deficiencies in the sport of wrestling, where international competition is experienced at the highest level. Physical activities that increase agility should be included more in training planning.

Limitations

This study's scope is narrowly defined by its focus on a specific cohort of 37 elite young wrestlers specializing in the Greco-Roman style, who have demonstrated success at national or international competitions and were subsequently invited to join the Turkish Greco-Roman Style Youth National Team Candidate Squad in 2024. The participants' voluntary involvement in the study, after being thoroughly briefed about the testing procedures, measurements, and test protocols, along with the provision for preliminary warm-up and test trials, delineates the study's methodological approach. However, this focus inherently limits the generalizability of the study's findings. The research is specifically confined to elite young athletes within the U-20 category, potentially excluding insights from older or less experienced wrestlers, and may not reflect the broader population of Greco-Roman wrestlers or those from different wrestling disciplines. Additionally, the selection criteria restrict the study to athletes who have already achieved a certain level of success and recognition, possibly overlooking the physical and performance characteristics of emerging talents or those at the grassroots level of the sport. This constraint may influence the study's applicability to the development of training and performance enhancement strategies across the wider wrestling community.

Recommendations

Based on the elucidated findings regarding the physical characteristics, anaerobic power, and agility of Turkish elite Greco-Roman style young wrestlers, this study posits several actionable recommendations aimed at optimizing training protocols, athlete development, and

subsequent research endeavors in the sport of wrestling. Firstly, it is imperative for coaches to integrate comprehensive body composition management strategies, prioritizing the maintenance of optimal body fat percentages and lean mass ratios through tailored nutrition and weight management plans. Secondly, the development of anaerobic power, particularly in the lower body, should be accentuated within training regimens, employing methodologies such as plyometrics, sprint training, and high-intensity interval training to enhance explosive strength. Thirdly, agility training, focusing on quickness, change of direction, and balance, must be systematically incorporated into the athletes' preparation to mirror the dynamic and high-paced nature of wrestling.

Additionally, the adoption of a holistic approach to athlete preparation, addressing mental toughness, recovery, and psychological resilience, alongside physical training, is recommended to foster a well-rounded athlete profile. For sports science professionals, the execution of longitudinal studies to monitor changes in physical attributes and performance over time, alongside research into the efficacy of individualized training programs, is advocated to further refine athlete development strategies. Furthermore, the exploration of technological advancements in training and athlete monitoring should be pursued to enhance the specificity and effectiveness of training interventions.

Wrestling federations and sports institutions are encouraged to invest in the development of comprehensive athlete development programs that not only focus on physical training but also encompass nutrition, mental health, and recovery protocols. Facilitating a platform for the exchange of knowledge, innovative training methodologies, and research findings among coaches, athletes, and sports science professionals through workshops and seminars is also recommended to elevate the sport's competitive standards globally. Implementing these recommendations will not only advance the preparation and performance of elite Greco-Roman wrestlers but also contribute to the broader objectives of enhancing the competitive landscape of wrestling.

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