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The influence of practicing martial arts on the development of rural students

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Abstract

Throughout history, physical education has witnessed both periods of prosperity and times of decline. Dating back to the ancient world, it was held in high regard, as evidenced by well-known maxims like "Beautiful and good" (Kalos, Kai, Agatos) and "Mens sana in corpore sano", which encapsulate valuable ideals about the educational ideal. These maxims suggestively reveal the intrinsic unity between physical and mental well-being, highlighting their intricate interplay.

However, in the realm of physical education and sports for students, the development of psychomotor qualities has not always received the attention it deserves. Often, solutions have been proposed without fully considering the educational objectives or precisely defining the role of motor qualities in achieving these objectives and molding students' desired training outcomes.

Introduction

The constructive aspect of the intricate process of training and shaping the younger generation is paramount, with physical education being acknowledged as a significant contributor to the holistic development of individuals across various stages of societal evolution (Barta A., Dragomir P., 1995). Moreover, through its means, organizational forms, and settings, physical education has been recognized as a key factor in fortifying and strengthening the body, as well as in compensating for intellectual activities and promoting recovery (Bompa T., 2002; 2003).

Martial arts offer numerous health benefits to practitioners, positively impacting their balance and longevity. Despite portrayals in the media as a violent sport, studies have shown that martial arts do not inherently attract violent individuals; instead, many practitioners are drawn to it to acquire self-defense skills (Galea I., 2014). Moreover, contrary to common misconceptions, engaging in martial arts has been associated with a decrease in aggression and hostile tendencies (Fuller C., 2020).

Martial arts are known to cultivate tranquility and wisdom, aiming to shield young individuals from aggression and inner turmoil (Belizna C., 2006; Bernat S.-E., 2003). Engaging in this sport presents a personal challenge for young practitioners to surpass their limitations and conquer their inner struggles, recognizing the inseparable connection between mind and body. Through rigorous training, martial arts facilitate the attainment of harmony within oneself and with the surrounding environment (Bica D.M., 2009; Bocos M., 2019).

Engaging in martial arts entails adhering to principles grounded in self-respect, respect for others, discipline, composure, and coordination, which serve as the cornerstone for fostering noble, upright, and resilient characters. In today's technologically driven society, where youth are increasingly influenced by media, these values are paramount. Cultivating compassion and sound judgment can only be achieved on such a robust foundation (Frumos F., 2008; Frazzei F.F., 1972).

Despite often being misconstrued as promoting violence, martial arts emphasize self-mastery and inner strength. The true victor in martial arts is the one who triumphs over their own inner conflicts, harnessing exercise to control impulses and advocate for peace (Epuran M., 2005). With its focus on spiritual growth, martial arts views opponents as partners rather than adversaries, discouraging conflict. However, should an individual face aggression, they possess the capability to defend themselves (Dragnea A., Bota A., 1999).

Martial arts play a significant role in shaping the character of children who engage in this discipline, fostering organization, empowerment, and the development of mature thinking and discernment, which prove invaluable when they encounter decision-making situations (Dragomirescu G., Kum S., Bojin E., 1972).

Beyond imparting self-defense techniques and cultivating physical health, the practice of martial arts instills in students special moral qualities. Decency, wisdom, and honesty are character traits inherent to martial arts practitioners (Neighborhood Encyclopedic Dictionary, 2004; Small Encyclopedic Dictionary, 1978). For instance, in disciplines like wushu, practitioners adhere to a principle of non-violence, refraining from causing harm while also defending themselves when necessary. This ethos promotes balanced reactions in situations of aggression (De Sensi J.T., 1995).

Martial arts have traditionally prioritized the cultivation of moral values, emphasizing virtues such as nobility and creativity, which, when integrated with technical training, contribute to overall health and conflict resolution (Demeter A., 1979).

Furthermore, an increasing body of research consistently demonstrates that regular physical exercise not only aids in the prevention of various illnesses but also serves as an effective adjunct in their treatment in some cases (Dragnea A., 2002).

The essence of martial arts lies in unarmed combat against any form of aggression (Encyclopedic Dictionary of Educational Sciences, 2007). Mastery of armed combat cannot be achieved without first mastering one's own body, as weapons are viewed as extensions of the body, particularly the arms (The Secret of Martial Arts, as described by Deshimaru, Bota, A., Virgil, T., 2004).

According to Deshimaru, the essence of martial arts lies in learning to focus the mind and direct it effectively, with Budo serving as the discipline that teaches this mental control (Bota, A., Virgil, T., 2004).

In martial arts, the mind must remain fluid, without any inclination toward aggression, yet fully focused on the opponent. Reactions occur instantaneously and automatically, facilitated by a deep awareness of the present moment. Actions unfold spontaneously, without conscious thought, as a result of pure awareness and readiness (Bugle S.C., 2003; Burlacu Gh., 2008).

According to Jigoro Kano, the founder of Judo, the spiritual and physical aspects of energy are interconnected and should be perceived as such. He emphasizes the importance of the body as the foundation upon which virtue is built, and stresses the alignment of physical

movements with moral values (Chaabene H., Hachana Y., Franchini E., Mkaouer B., Chamari K., 2012; Cheung T., 2020).

In martial arts, mastery is achieved through the control and direction of actions according to moral norms, aiming to establish good relations and social harmony (Burlacu Gh., 2008; Craşovan I. D., 2011).

Martial arts training engages all muscle groups, enhancing muscle tone, flexibility, and balance while also providing physical and mental strength. Additionally, martial arts can aid in weight regulation by influencing the brain's satiety center in the hypothalamus, which helps control hunger and appetite (Crețu T., 2005; Cristea S., 2010). Just one hour of moderate-intensity martial arts training can burn up to 500 calories.

Through the structured goal-setting, continual encouragement, and adherence to values inherent in martial arts programs, practitioners experience a boost in self-confidence, leading to an elevation in self-esteem (Carstea Gh., 1993).

Regular practice of martial arts not only enhances cardiovascular function but also fosters a positive mindset when it becomes a habit. Martial arts practitioners learn to recognize their weaknesses, maintain focus, and remain prepared to confront challenges (Cuckoo C., 2006; Cureteanu R., 2006).

During childhood, motor potential develops rapidly, with children displaying a diverse range of movements, a keen sense of rhythm, and a degree of precision in execution. Exposure to various outdoor activities plays a crucial role in shaping children's motor potential, providing them with extensive motor training beyond what is typically offered in physical education classes (Carstea Gh., 1993).

Material and methods

The progression of natural skills and fundamental motor abilities lays the groundwork for the acquisition and refinement of new, more intricate motor skills. Understanding the characteristics of both motor qualities and motor skills is essential for educators to effectively implement physical education programs.

The process of motor and somatic functional evaluation plays a pivotal role in ensuring quality and efficiency in the field of physical education. Through this evaluation process, specialists are able to assess human performance, taking into account the intricate interplay of various factors. It's important to note that determining human performance requires a nuanced approach due to the multifaceted nature of the contributing factors.

The study group consisted of 88 children ages 6 to 11 years who volunteered to undergo testing before and after 90 days of martial arts practice.

Test 1 Name: Trunk Lifts from Dorsal Lying

Purpose: This test assesses the strength and endurance of the abdominal muscles in a resistance regime.

Usage: It is utilized to evaluate the effectiveness of a training program by comparing an individual's strength with the population norms.

Materials Needed: A flat surface, typically a firm mattress, a stopwatch, and assistants.

Procedure: The subject lies on the mat with the ankles secured by one assistant. At the command of another assistant, the subject begins performing trunk lifts at a pace of 20 repetitions per minute. The stopwatch is started simultaneously. The assistant stops the timer when the subject is no longer able to perform the movement correctly, and the number of repetitions completed is recorded.

Test 2 Name: Long Jump from Standstill

Purpose: This test assesses the speed and force of the muscles in the lower limbs, specifically measuring explosive force or power.

Usage: It is used to compare an individual's strength with the population norms, providing insight into the potential for performance in sports.

Materials Needed: Sandpit, measuring tape (roulette), and an assistant.

Procedure: The subject stands in front of the sandpit and performs a jump, taking off from both legs and landing on both legs. The distance between the tips of the feet and the last

mark left by the subject in the sandpit is measured using a measuring tape. The distance is noted in meters and centimeters.

Test 3 Name: Vertical Jump

Purpose: This test measures the force in the speed regime of the muscles in the lower limbs, also known as explosive force or power.

Usage: It is used to assess the effectiveness of a training program and to compare the strength of an individual with the population norms.

Materials Needed: A wall marked with the vertical jumping area, denoted in centimeters.

Procedure: After a preliminary warm-up, the subject sits against the wall and performs the jump. It is recommended to perform three jumps and record either the best or the average of the three jumps. The height achieved is recorded in centimeters.

Performance Analysis: The performance is analyzed by comparing the results with previously obtained data or normative data.

Test 4 Name: Bosco Test

Purpose: This test measures the explosive force in the resistance regime of the muscles in the lower limbs.

Usage: It is used to determine the effectiveness of a training program, for selection purposes, as a forecast for performance sports, and for scientific research.

Materials Needed: Bosco or optojump platform, laptop, timer, assistant.

Procedure: The subject is positioned in the recording area of the device and will perform vertical jumps, aiming to jump as many times and as high as possible within a specified interval, typically ranging from 15 to 60 seconds. The estimation of the resistance regime force is made by calculating the mechanical power.

Performance Analysis: The performance is analyzed based on the recorded data, including the number of jumps and the height achieved, and compared with established norms or previous results.

Results

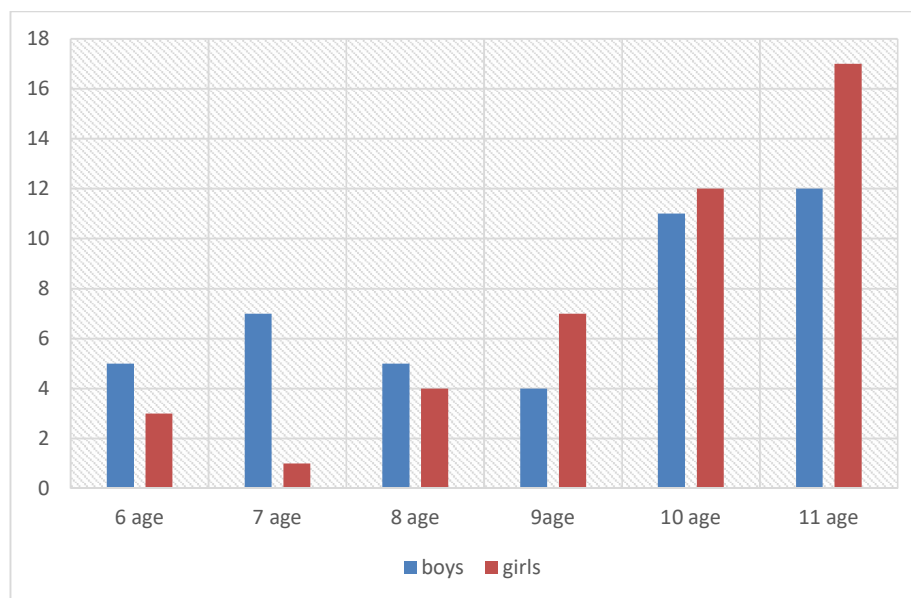
During the growth and development stages, different bodily elements exhibit varying rates of change. For instance, there is rapid growth in the cranial box and brain, with 6-year-olds already reaching 90-95% of adult values, while overall body dimensions are about half of those of adults. The child's locomotor system lacks the resistance of adults, necessitating the gradual introduction of exercises with varying difficulty levels.

During this period, the morpho-functional growth and development of schoolchildren are faster and generally more uniform compared to previous stages. Muscle mass develops relatively slowly, and muscle tone is lower, allowing for greater range of motion in various joints.

The study group comprised 88 children aged 6 to 11 years, categorized as follows by age.

Fig. 1

Graphical representation of the study group according to sex and age of participants.



The study group comprised 59.53% boys and 40.47% girls of the total participants.

Fig. 2

Graphic representation of the study group by gender.

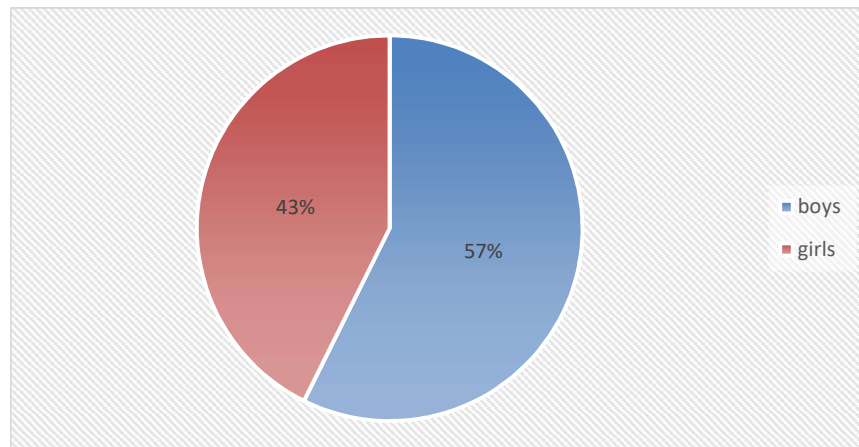


Fig. 3

Graphic representation of boys from the study group from the point of view of development and growth of body elements.

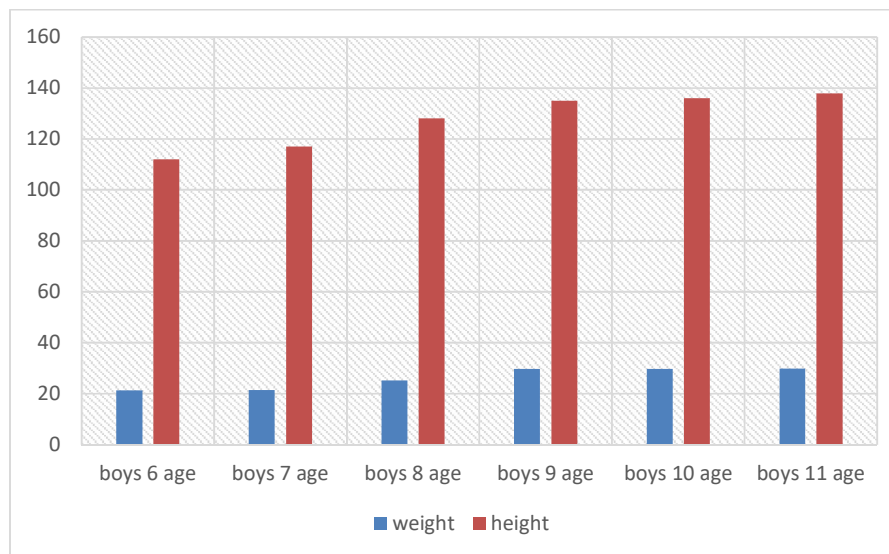


Fig. 4

Graphic representation of the girls in the study group from the point of view of development and growth of body elements.

According to the established criteria, it was observed that in primary school, girls are generally taller than boys at this age.

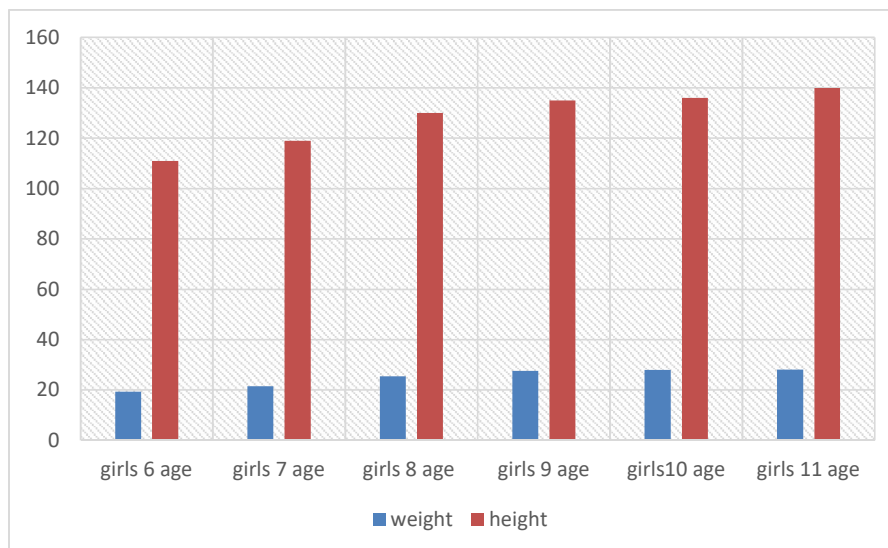
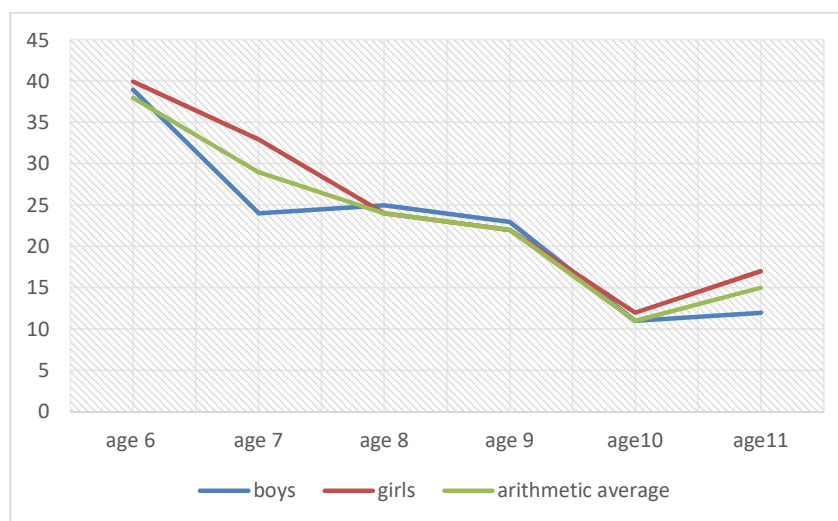


Fig 5

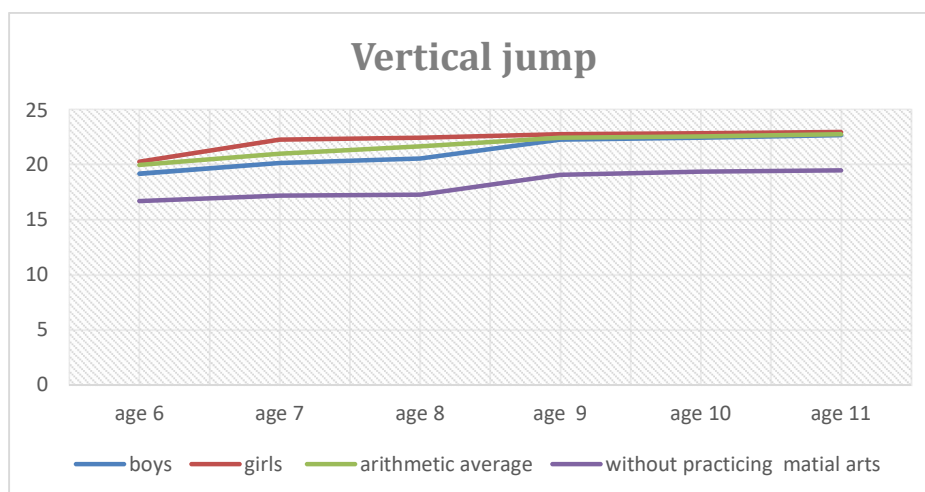
Graphical representation of participants in the study group at tEast No. 1- Trunk lifts from dorsal lying down.



Students who did not engage in martial arts training were below the average of those who did, indicating that such training contributes to enhancing the overall physical and mental well-being of students.

Fig 6

Graphic representation of the participants in the study group at the vertical jump test

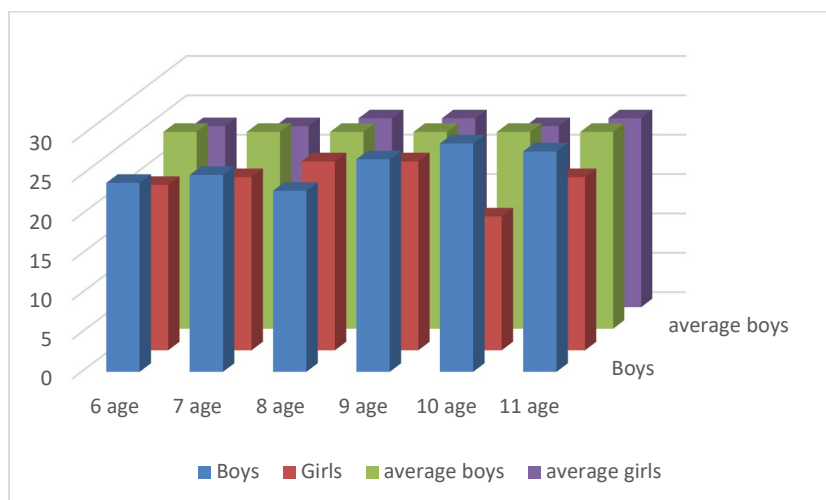


Students who did not engage in martial arts training were significantly below the average of those who practiced, highlighting the beneficial effects of such training on the physical and mental condition of students, as well as the development of their motor skills and coordination.

The Bosco test is the tool used to determine the explosive force in the resistance regime of the lower limb muscles of the students who were part of the study group.

Fig 7

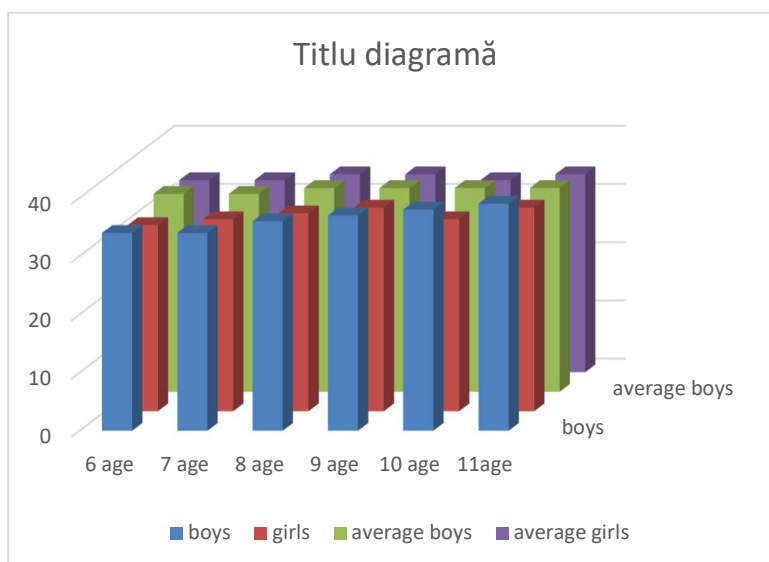
Graphical representation of the participants in the Bosco test study group at a time of 15 s.



Vertical jumps will be conducted within a 15-second interval, aiming to achieve as many jumps as possible and to attain maximum height. The estimation of the resistance force of the participants in the study group will be determined by calculating their mechanical power based on these vertical jumps.

Fig 8

Graphical representation of the participants in the Bosco test group at a time of 60 s timed



Vertical jumps will be executed, aiming to achieve as many jumps as possible and to reach maximum height, within a 60-second duration. The estimation of the resistance force of the participants in the study group will be determined by calculating their mechanical power based on these vertical jumps.

Conclusions

During primary school years, children undergo significant personal development, offering various models that can be effectively utilized in formal physical education activities. Psychic activity and its development at this age vary from one individual to another, influenced by factors such as pace, speed, energy consumption, and direction. Each aspect of mental activity plays a role in shaping and developing personality, impacting how children interact with others.

Children's development is manifested across three main domains: physical, cognitive, and socio-emotional. The study group in our research falls within the age range of 6 to 9 years, a critical period where we must capitalize on the diverse opportunities available through appropriate stimulation. These experiences contribute to shaping the child's physical, cognitive, and socio-emotional profile.

Research and scientific literature consistently demonstrate that martial arts do not attract violent individuals or promote violence. These ancient forms of combat, adapted into modern sports, self-defense practices, and recreational activities, benefit millions of practitioners by promoting health and inner balance. Contrary to misconceptions, martial arts do not encourage violence; instead, they serve as therapy for individuals with aggressive tendencies.

Martial arts offer numerous health benefits, contributing to overall well-being. They are safe activities, especially when proper equipment is used, and beginners are carefully initiated. Traditional martial arts schools often incorporate mental and meditation techniques into their training, promoting positive personal transformations.

In an age where obesity rates are rising due to sedentary lifestyles, martial arts provide enjoyable alternatives to traditional exercise. They offer unique opportunities to learn self-defense techniques while improving physical fitness. Middle-aged practitioners, in particular, experience significant improvements in aerobic capacity, balance, strength, body weight, and flexibility compared to sedentary individuals.

Many parents and martial arts instructors note that practicing these sports can serve as therapy for children with ADHD. Martial arts promote concentration, reduce impulsivity, and enhance discipline by engaging participants in intense physical exercises, following verbal and visual commands, and practicing in a structured environment.

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