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Research Article

Anthropometric and Physical-Conditional Potentialities of Athletes with Intellectual Disabilities for the Practice of Special Olympics Athletics

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Received: July 18, 2020; **Published:** August 31, 2020

Abstract

Introduction: The work is framed in the subject of the evaluation of anthropometric and physical-conditional indicators in athletes with intellectual disabilities of the Special Olympics Program in Athletics.

Objective: To assess the physical condition in athletes with intellectual disabilities of the Special Olympics Program in Athletics, bases on anthropometric and physical-conditional indicators.

Methods: A descriptive study carried out under a quantitative paradigm was carried out, where 10 athletes with intellectual disabilities, members of the Athletics team of the Special Olympics Program in Villa Clara participated. Anthropometric measurements were made in upper and lower limbs such as ranges, lengths and circumferences, as well as, indicators of conditional physical capacities such as flexibility, strength of arms, abdomen and legs; speed and resistance.

Results: The results showed the main anthropometric and physical-conditional characteristics that distinguish athletes, as well as their analysis based on the potential for sport, based on the behavior of the mean values of each indicator.

Keywords: *Indicators; Intellectual Disability; Anthropometric; Physical Conditional*

Introduction

Adapted sport refers to physical activity or physical exercise that seeks to develop and potentiate physical abilities and skills, in people with disabilities, this constitutes an exceptional factor for personal, social and psychological development for this population.

According to Torrealba [1] the main reasons that motivate the practice of physical activities of people with disabilities are: playing sports, improving their level, exercising, competing, being physically well, having fun, staying fit, winning and improving skills.

For Pérez-Tejero [2] adapted sport is that physical sport activity that is capable of accepting modifications to enable the participation of people with physical, mental or sensory disabilities. Adapted sport offers the possibility of accessing this right to people who under normal sports conditions could not and allows them to practice physical and sports activity, both in the recreational and competitive fields.

For adapted sport to be possible it is also necessary that other aspects are adapted, such as transport, buildings or public roads. This type of sport is adapted to all athletes with differential manifestations of the motor, sensory or psychic type, or the handicapped.

In the case of adapted sport, its benefits are closely related to rehabilitation; on a physical level, it allows having new experiences of movement, it facilitates the discovery of abilities, develops motor capacities and sports skills, enhances functional development and limits the comorbidities associated with the primary health condition; It also benefits psychosocial self-care, work capacity, improves self-esteem and self-efficiency and motivation for a goal.

The Special Olympics (O/E) mission is to provide year-round athletic training and competition in a variety of Olympic-type sports to all people over 8 years of age with intellectual disabilities, giving them continuous opportunities to develop fitness Physics, showing courage, experiencing joy, and participating in an exchange of gifts, skills, and camaraderie with their families, other Special Olympics athletes and the community at large [3].

Their vision is an unprecedented global movement, which, through quality sports training and competition, improves the lives of people with intellectual disabilities and therefore the lives of all the people they reach. Its goal is that all people with intellectual disabilities have an opportunity to become useful and productive citizens who will be accepted and respected in their communities [3].

The number of Athletics events or tests available at Special Olympics is geared to offer competition opportunities to all athletes of all abilities and possibilities. Programs can determine the events offered and, if required, guidelines for handling those events. Coaches are responsible for training and selecting the appropriate test or event for each of the athletes depending on their skill and interest.

Special Olympics Athletics includes track, field and combined events. In this sense, track events contain races from 25 to 10,000 meters; races with Fences of 110 meters for men and 100 meters for women; 4 x 100 meter relays; 4 x 400 meters and these same events with a "Unified" character, that is, where an athlete without intellectual disability can be included [3].

Between the combined events; the pentathlon (100 meters, long jump, bullet drive, high jump, 400 meters). In the events of the Assisted Olympic March 10, 25 and 50 meters; Wheelchair events in races of 10, 25, 30, 50 meters; Wheelchair Bullet Drive; Road races; half marathon and marathon.

Cuba actively joined the Special Olympics movement in the 1980s, both nationally and internationally, where Athletics stood out as the sport with the best and greatest results.

The subject of anthropometric measurement has been addressed by authors such as: De la Vega., *et al*. [4]; Canda [5]; Cossio., *et al*. [6]; Nikic., *et al*. [7] and Castillo and Espinoza [8]. In his works, its use serves different purposes; depending on nutritional status, demographic comparisons, and sports initiation.

In relation to anthropometric measurements in people with intellectual disabilities, the latter emphasize that schoolchildren with intellectual disabilities should be characterized anthropometrically (……), they should be attended to and studied from various points of view, in order to provide information regarding the general health status of this population.

In the sports context, the National Special Olympics Program in Cuba has reached relevant levels in terms of organization from the base, incorporation and preparation of athletes, training of coaches, volunteers and families; inclusion of new sports; in this context.

The sport of Athletics constitutes a strength in the program from the base to the international results of the program, however, in the practice of the Provincial Program of Special Olympics in the province of Villa Clara, even though favorable results have been achieved in

the competitions, the training of this sport has been developed with an unsystematic and empirical character, since it has not started from a real knowledge of the state of basic indicators of physical condition, which could favor performance in the practice of Athletics.

In this sense, the problem situation related to the ignorance of anthropometric and functional indicators of athletes with intellectual disabilities for their incorporation into the sports practice of Special Olympics, specifically Athletics, subsists; therefore, this research has the purpose of determining the behavior of anthropometric and functional indicators of athletes with intellectual disabilities.

Methodology

The population is made up of the ten school athletes who make up the men's Special Olympics Athletics team in the Province of Villa Clara, category 13 - 15 years, all boys. They belong to different special schools for the education of schoolchildren with intellectual disabilities. They reside in different municipalities of the province, which they have represented in different national competitions.

Number of athletes	Sex	Age	Weight	Size
10	M	13,6	58,3	1,605

Table 1: *General characterization of the athlete population.*
Source: Self-made.

Methods, techniques and procedures

The research methods used in the research are as follows: theoretical level, synthetic analytical, inductive deductive; At the empirical level, document analysis, survey, interview, and measurement were used, and descriptive statistics were used for the statistical method.

For statistical processing, the arithmetic mean and frequency were used to verify the mean values and the position of the athletes with respect to them.

Results and Discussion

Result of the measurement of anthropometric indicators.

Result of the measurement of functional indicators.

Indicator	Media	Above average athletes	%	Below average athletes	%	Equalizing athletes	%
Reach up (from floor)	1,97	4	40	5	50	0	0
Reach Forward	0,73	6	60	4	40	0	0
Side Reach	0,67	4	40	6	60	0	0
Forearm length	0,44	3	30	7	70	0	0
Hand length	0,16	4	40	4	40	2	20
Palm length hand in hand	0,8	5	50	3	30	2	20
Palm width	0,8	3	30	3	30	4	40

Table 2. *Frequencies of athletes who exceed the average in the anthropometric indicators of the upper body.*
Source: Self-Made.

The table shows that the indicators where the athletes are above the mean and the mean are forward reach (6 athletes) and palm length hand in hand (5 athletes). These athletes have potential for launching tests as the length of the arm affects the initial flight height of the launch, the initial angle of flight and the range of application of force, which are determining factors in the results of these tests. In the case of the length of the palm of the hand, it also affects favorably the grip of the implement, which gives it a greater and more secure grip.

Indicator	Media	Above average athletes	%	Below average athletes	%	Equalizing athletes	%
Hip-to-floor length	0,89	2	20	8	80	0	0
Hip-knee length	0,43	2	20	6	60	0	0
Knee-ankle length	0,4	3	30	5	50	1	10
Foot length	0,25	2	20	6	60	2	20
Thigh Circumference	0,4	4	40	5	50	1	10
Calf Circumference	0,32	5	50	4	40	1	10

Table 3: *Frequencies of athletes who exceed the average in the anthropometric indicators of the lower body.*
Source: Self-Made.

It can be seen in this table, that there are no athletes who exceed the mean, however there are athletes who are in the mean in the calf circumference indicator (5 athletes) which can affect the mass necessary to produce strength and close to the average, the thigh circumference indicator where four athletes have conditions to also generate force through muscle contraction. These athletes have the potential to achieve competitive results in jumping, speed and throw tests.

Total	Above average	%	Below average	%	Match	%
Flexibility	6	60	4	40	0	0
Speed	5	50	4	40	1	10
Irons	4	40	6	60	0	0
ABS	5	50	5	50	0	0
S L. S/c/i	5	50	5	50	0	0
Resistance	4	40	6	60	0	0

Table 4: *Frequencies of athletes who exceed the mean in functional indicators.*
Source: Self-Made.

In relation to functional indicators, it is important to highlight that in flexibility, there are 6 athletes above the average and 5 athletes who are average in indicators such as speed, abs and long jump without an impulse race, which reflects that at Despite the fact that in previous tables some athletes have possibilities of achieving good results in throwing, jumping and speed tests, the truth is that half or more of the athletes are not in a position to show good results in said tests, because they are below the average, which may be influenced by age since the force is noticeable after 15 years, influencing this in the speed tests. In the case of disciplines or endurance tests, athletes with conditions for performance in endurance tests are not appreciated, so coaches must emphasize the preparation of athletes with insufficient development and enhance the physical condition of those who present adequate preparation.

Conclusion

The results of the analyzed indicators show that there are 5 of the 10 athletes who have potential to achieve good results in the Special Olympics, so they must be given differentiated attention and continue preparing those who have not shown good physical condition to achieve Outstanding results in said Olympics.

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Volume 11 Issue 9 September 2020