

## PLANNING IN ATHLETES WITH PHYSICAL MOTOR DISABILITIES, BULLET- IMPULSION AMPUTEES

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**Abstract:** *Contemporary training is not based on experiences, its success lies in the confluence of knowledge and application of the different sciences that converge in it. The objective of the research was to argue what aspects should be considered for sports planning in athletes with physical motor disabilities, bullet amputees. A descriptive research is carried out. Arguing their different classes and classifications and the aspects to take into account when planning training. Provincial and national coaches and managers collaborated as a sample. Research methods were used such as: analysis and synthesis, survey, interview and document analysis, which made it possible to define the essential elements for a correct individualization of the training.*

**Key words:** *Amputation, Characteristics, Classification, Disability, Planning.*

### 1. Introduction

The National Institute of Sports, Physical Education and Recreation (INDER) and the Cuban Association of Physically Limited Motors (ACLIFIM) facilitate the inclusion of people with disabilities in the practice of physical and sports activities, but once inserted in sports, what role it is up to the professionals responsible for the training process of athletes with disabilities to play.

In (non-formal) interviews with managers, coaches and athletes of provincial and national teams, it has been confirmed that those responsible for the

practice of the discipline of bullet impulsion in amputee athletes with physical motor disabilities do not have the documentation to guide them and enable adequate sports planning, are based on their experiences as athletes, years of practice as coaches and fundamentally on the transposition of training plans of conventional athletes, an aspect that influences sports results as one of the negative factors. The objective is to argue what aspects should be considered for sports planning in athletes with physical motor disabilities, bullet-impulsive amputees.

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The practice of sports for people with physical motor disabilities, amputees in Cuba, is designed to be developed through sports teams, in addition to special schools, some directly in the teaching-learning process and others in participatory sports; In the latter, emphasis is placed on different sports.

A long time ago, performance sports stopped being an activity based on experiences; current training has a high scientific level in which the contributions of the sciences related to it are complemented [5], [9].

In adapted sport, the greatest obstacles and difficulties that coaches encounter in their development are materialized in the lack of human resources, materials and scientific work, in the heterogeneity of athletes and in the lack of preparation for attention to the diversity of existing classifications in this area [1], [3].

Ruiz (2012) in his article "Future of Paralympism" states:

For this process, historically, two fronts have been presented: on the one hand, the proposal to adapt the development of the conventional training methodology to the Paralympic sector and, on the other, the consideration of disability as a guiding element of the process. It is understood that both proposals are valid and that their implementation depends on each case. (p.1)

## 2. Materials and methods

The present research, according to the depth of knowledge that is intended to be obtained, is descriptive since its objective is to argue and describe the fundamental characteristics for sports planning in athletes with physical motor disabilities who are shot amputated. 17 coaches were

selected as a sample, intentionally, guided by the characteristics of the research and the selection criteria were the following:

- Be a coach for amputee athletes with physical motor disabilities at the provincial and national level, linked to the practice of bullet propulsion.

Other participants were the six directors of the national department of sports care for people with disabilities.

Research methods were used that allowed obtaining the necessary information about the background, current state of the problem, as well as empirical data, on different indicators that characterize training with these athletes, as well as the necessary aspects to be taken into account by coaches. in the training planning process with a scientific approach. Among them are:

### 2.1. Theoretical Methods

Analysis and Synthesis: this method was used for the process of studying the bibliography and developing the theoretical foundation of reference, in order to select the essential aspects that characterize sports planning in athletes with physical motor disabilities, amputees in mobility. bullet.

Inductive-Deductive: present at all times, it allowed us to infer and establish the aspects with which we base the final criterion of this research.

### 2.2. Empirical Methods

Document analysis: allowed the collection of information, which obtained an adequate volume on the problem and facilitated the definition of the elements that characterize sports planning in

athletes with physical motor disabilities, bullet-impulse amputees.

Survey and Interview: they were used as techniques that inform the criteria of coaches and methodologists on sports planning in athletes with physical motor disabilities, bullet amputees.

### 3. Results

The survey and interview applied to trainers and methodologists participating in the process yielded the following results.

Athletes with physical motor disabilities, amputees in the competitive order are grouped by disability, which brings with it a variability of ages since the disability can be acquired at any time in life.

There are no sports initiation schools, nor a pyramid that facilitates the selection of these athletes. Based on these reasons, the national commission establishes that athletes who meet the minimum marks required by municipal and provincial events move on to national events, and from there they are They select the athletes with the best records to join the national team.

It is stipulated that these athletes, due to their low representation in sporting events, can compete in three individual events and one collective event, where the collective event can be relays or a team sport, which highlights the importance of training. multilateral, with the perspectives of sports improvement in different manifestations and with the aim of using sport as a means of multifaceted education of athletes.

Regarding the documentation available to those in charge of carrying out the management of the training process of these athletes, 100% of the coaches

surveyed claim not to have a training program for amputee athletes with physical motor disabilities, they adapt the plans of training conventional athletes to the disabled.

The literature on this topic is extremely scarce and makes it difficult to carry out work directed with an adequate scientific methodological orientation, which, without a doubt, goes against the principles of sports training in attention to individual characteristics, since it does not allow establishing a correct relationship. between the possibilities and disposition of each athlete's performance.

Ratifying the importance of having the documentation of these athletes, as one of the contributions that allows logically planning the sports training process and responds to their competitive needs.

In the interviews carried out about the knowledge of the classification system by the coaches, there is no clear mastery of the subject; they allege that the training is not constant, among other causes such as: little experience in working with these athletes and the constant updating of the classification system.

The functional sports medical classification, due to its extensive content, is one of the most important topics to be mastered by coaches since all planning must be done based on the classification which determines the form of competition.

In disability sport or parasport as it is more commonly named in the literature related to the sports classification system, athletes are grouped by the degree of activity limitation resulting from the disability.

Because sports require different activities, the impact of disability on each sport also differs. Therefore, for

classification to minimize the impact of impairment on athletic performance, it must be sport-specific.

To avoid this, athletes with disabilities are classified into categories to compete based on their impairment, these are called sports classes.

The International Paralympic Committee (IPC) classification system determines which athletes are eligible to compete in a sport and how athletes are grouped for competition. This, to some extent, is similar to grouping athletes by age, gender or weight.

The Paralympic Movement offers sporting opportunities for athletes who have a disability that falls into one of the ten eligible disability types identified in the "Policy on Eligible Disabilities in the Paralympic Movement", in section two, chapter 3.13 of the IPC manual, updated by the national department of sports for people with disabilities (DNPDD) in 2019.

Of the ten types of eligible disability, below is a description of the two types that include amputee athletes with physical motor disabilities to whom the research is directed.

- Limb deficiency: Complete or partial absence of bones or joints as a result of trauma (e.g., car accident), disease (e.g., bone cancer), or congenital limb deficiency (e.g., dysmelia).

- Leg length difference: Bone shortening in one leg due to congenital deficiency or trauma. National Department of Sports for People with Disabilities (DNDPD) 2019.

According to the brochure of eligible classes from the national sports department for people with disabilities.

Athletes with disabilities who have a similar impact on sports performance will compete in the same sport class. The system ensures that athletes are not

successful simply because they have an impairment that causes fewer disadvantages than their competitors, but because of their skill, determination, tactics, aptitude and preparation.

Below is the general structure of the para athletics classification of amputee athletes who may be included in the throwing discipline. As established in the document classes to determine eligible (DNDPD athletes) 2019.

The numerical figure represents the level of deterioration; The lower the number within each type of impairment, the more severe the impairment:

Classification to participate in athletics competitions field prefix (F).

In field events (F), amputee athletes are grouped by classes from F42 to F44, F46, F56, F57 and F61 to F63, grouping amputees who compete standing with or without prosthesis and those who compete seated.

Discipline: Standing throws.

Sports classes (types of impairment):

F42-44 (Lower limb competing without prosthesis, affected by limb deficiency, leg length difference)

F46 (Limb/upper extremities affected by limb deficiency)

F61-64 (Lower extremity limb/s competing with prosthesis, affected by limb deficiency and leg length difference)

Discipline: Seated throws.

Sports classes (types of impairment):

F56-57 (Lower limb member/s competing sitting, affected by limb deficiency and leg length difference)

In all cases the dependence on severity is established in numerical ranges, the higher the number, the lower the severity.

Cuba is organized from grassroots practice to high performance under these same classification principles and

standards, to achieve the insertion and participation of athletes with disabilities in the entire national and international sports movement.

To better understand the classification of athletes with physical motor disabilities according to the level of amputation and for competition in field events (throwing) in athletics, it is necessary to know what class (functional sports medical classification) they are in, the description of the deficiency and the conditions or characteristics of how it competes. (D. E. Andux Ruiz, personal communication, July 2, 2021)

All of the above made it possible to prepare the following table as a result of the research and consultation and training document for coaches, which groups together the different aspects that must be known in the functional sports medical classification system of athletes with physical motor disabilities who are amputated in the throwing disciplines, which was designed in collaboration with the management of the national department of sports for people with disabilities, specifically with the methodologist Douglas Ernesto Andux Ruiz.

Table 1

*Classification of athletes with physical motor disabilities, according to the level of amputation and for competition in field events (throwing) in athletics*

Athletics class Field (classification)	Amputation level description	Competition characteristics
F42-44: DEFICIENCIES IN THE LOWER LIMBS Lower limb affected by limb deficiency and leg length difference.		
F42	Athletes have unilateral and/or bilateral lower limb amputations above the knee.	Compete without prosthesis, standing and without support.
F43	Athletes have bilateral lower limb amputations below the knee.	
F44	Athletes have unilateral lower limb amputations below the knee.	
F46-47: DEFICIENCIES IN THE UPPER LIMBS Upper limb affected by limb deficiency and arm length difference.		
F46	Athletes with unilateral above-elbow or through-wrist/below-elbow amputation and an intact arm.	Compete standing and without support.
F56-57 DEFICIENCIES IN THE LOWER LIMBS Lower limb affected by limb deficiency and leg length difference.		
F56	Athletes with bilateral above-knee amputations.	Compete seated
F57	Athletes with unilateral above-knee amputations, or another combination of lower limb impairment that does not fit the profile described above (F56).	
F61-63: DEFICIENCIES IN THE LOWER LIMBS Lower limb affected by limb deficiency and leg length difference.		
F61	Athletes with bilateral above-knee amputations.	They compete standing, without support and use prostheses
F62	Athletes with bilateral knee limb amputations.	
F63	Athletes with unilateral above-knee or knee-extremity amputations.	

The differences between conventional sport and sport for the disabled are notable, the planning of their preparation differs in conditions, sports implements and accessories, knowledge and fundamentally in the athlete and their particularities.

There are various criteria for how to use the different methods, means and implements for sports planning in amputee athletes with physical motor disabilities. Before making a decision, the coach must know a series of important aspects to take into account with these athletes.

They must assume a commitment that implies knowing about the theory and methodology of sports training, in general, the elements related to the specific sport and the particularities of the disability.

In the last decade, the number of research works and publications related to Paralympic sport has increased, it is evident that this is a field of action that has ample room for its development.

Greater scientific rigor is required in the monitoring of processes as a way to avoid methodological errors that may affect the health of practitioners, one of the purposes of this research.

Consequently, after having analyzed each of the criteria addressed, the main considerations that should serve as a guide in the training process of amputee athletes with physical motor disabilities in shot put are argued:

The benefits that the practice of sport brings for athletes with disabilities on an individual, physical, health and inclusion level in society.

It is essential to know and be trained with the varied and complex functional sports medical classification system for athletes with disabilities.

Take into account that amputee athletes with physical motor disabilities in the competitive order are grouped by disability, which brings with it a variability of ages, an aspect to be considered in planning based on the principle of the individual nature of the loads.

Strengthen the youth pool at the base and perfect the selection system by designing specific tests and indicators for these athletes.

Taking into account the number of individual and collective events in which these athletes can participate, the training process must be multilateral.

Coaches in the Paralympic system must assume a commitment that involves knowing and applying the theory and methodology of sports training in general, the elements related to the specific sport and the particularities of each athlete's disability.

In any proposal that is considered to be applied for planning with athletes in the Paralympic sector, specific aspects such as:

Generally, the athletes who enter training programs were athletes who suffered some mishap in their lives, they do not immediately join the system, in all cases they need, first, mental and physical recovery depending on the injury and then, They require motor adaptation depending on the type and degree of acquired disability. Subsequently, they need time to develop skills, conditional and coordinative capacities, to compensate for the levels expressed by the individual before acquiring the disability:

Type of disability of the athlete, form and moment of acquisition of the

disability, level of functional and motor impairment.

Sports past, sports age, results of the previous cycle, achievement of objectives and specific competition characteristics.

Real possibilities of achievements, determination of general, specific and individual objectives of the process and its directions.

Conditions for the development of the process, place, implements, days and training times.

Control and evaluation of the process in which, due to the characteristics of these athletes, (Martínez et al., 2017) report that: "Taking into account the heterogeneity of athletes with disabilities, and the large number of sports that they can practice, it is difficult to determine specific protocols to evaluate these people, and that is why the importance of individualization" (p. 7).

It is necessary, therefore, to take into account that in any test carried out on recently recruited athletes, general reference values are not used to determine the level of physical condition in which they are found. We must always compare each individual with himself, and analyze the changes for better or worse that may occur to adapt training for satisfactory performance, which does not contradict that when the athlete acquires a sports mastery and participates in national and international competitions its results are compared with the best of the momento:

Taking into account the peculiarities of each athlete, the individual nature of the loads is of utmost importance to fulfill the tasks of preparation, establishing a correct relationship between the ability and disposition of performance on the one hand and the demands on the other, thus

guaranteeing the fulfillment of high goals that allow in the process to reach the limit of the organism's physiological possibilities without causing harm to the athlete and that allow maximizing productivity in terms of sports performance.

It is important to keep in mind that these athletes face conditions of execution of the exercises that are very different from the normal ones; sensory-perceptual work with direct representation through the demonstration of the new way of executing the exercises is very important. which will allow the athlete to evaluate the exercise in its entirety, with the support of graphic media, drawings, photo diagrams, or preferably from an experienced athlete with the same disability, his coach who is sometimes also disabled, demonstrating to the practitioners the relationships with the phenomenon, this allows providing representations with a high degree of abstraction.

The explanations must be clear so that the athlete forms a precise image of the movements they wish to develop later, since after acquiring the disability they lose a high percentage of their coordination skills:

Systematically diversify training by alternating methods, means and exercises, varying the possible limits of the magnitude of the loads, the number of repetitions and series, the weight of the implements and the pace of execution of the exercises.

Model in training the characteristics and form of competition according to the classification of each athlete.

Exercises with weights must always be performed in the company of the coach or a support athlete, who will ensure the

safety measures of each athlete during execution.

Pay attention to twisting exercises in athletes with prostheses, avoiding their detachment and possible falls or injuries.

Medical care for these athletes is of utmost importance; periodic supervision is recommended.

#### 4. Conclusions

Sport for amputee athletes with physical motor disabilities, in preparation planning, differs from conventional sport in conditions, implements, sports accessories, knowledge, sports classification system, and fundamentally in the athlete and their competitive particularities.

The aspects discussed contribute to developing and perfecting the training process in this sphere of sport, contributing to maintaining and surpassing the achievements achieved by athletes with disabilities.

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