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STUDY REGARDING GENERAL ASPECTS OF SPECIALTY LITERATURE ABOUT SELECTION IN WEIGHTLIFTING

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Abstract: *The research of the specialized literature was done both traditionally and online. Study the bibliographic sources were accessed from related fields that provide theoretical information on the selection and identification of talents in sports. The search criteria included books, articles or doctoral theses, educational sources, medical and psychological studies, empirical or theoretical research. Selection concepts, criteria and means of selection in sports for different age levels have been identified. For high performance sports, the most talented professional athletes are selected from practitioners who reach the threshold of maximum performance capacity at the age level at which they manifest or who meet the requirements imposed by large-scale competitions in which they participate.*

Key words: *sport, performances, selections, haltere, young generation*

1. Introduction

Practicing physical activities is a permanent concern of the young generation [4]. Exercising with weights for the development of general strength is useful for daily life, for the practice of performance sports or for recreational activities [9], [15], [27], [28]. Given the wide spread of this activity, the practice of weightlifting finds its place from an early age [30].

Even if at the beginning the weight training pursues other educational purposes, often, this exercise acquires the specific character of the specialized sport and leads to the practice of weightlifting by young peoples (Williams & Ford, 2008).

The practice of weightlifting has existed for hundreds of years with notable references in the literature of the ancient Rome, in writings from the ancient Greece or from China. However, the last century has seen a dramatic increase in the

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popularity of weightlifting, especially in the Eastern cultures or in the United States. The popularity of weightlifting seems to have increased due to the growing desire of the society on the development of muscles and strength. In the Western cultures, in particular, muscle and strength have been associated for centuries with the concept of masculinity, sexuality and strength, providing motivation to men to try to become bigger and stronger since ancient times [21].

With the growing popularity of the weightlifting in the twentieth century, several specific disciplines have evolved. These are: Olympic weightlifting, powerlifting, strongman and bodybuilding competitions. The history of weightlifting has ancient origins, this sport being present in the Olympic program since the first edition of the modern Olympics, in 1896, but continued to evolve in various forms until 1972, when the two Snatched and Thrown styles have been established as lifting procedures [32].

Weightlifting have grown steadily in popularity since the last century, especially since the 1950s, as evidenced by the growing number of athletes at the national and international competitions, as well as the number of weightlifting magazines and publications. Similarly, and in parallel, the manufacture and sale of equipment specific to this sport has increased.

An increasingly rich literature explains the steady growth in the popularity of the weightlifting over the last century. As previously mentioned, musculature has always been appreciated in the Western culture, as highlighted by the Greek and Roman statuettes, or the tradition of the Scandinavian or the Viking Gods. The existing evidence shows that this focus on muscle has advanced in the last century, especially since the 1950s. It is not clear what forces have fuelled this increase in the focus on the muscle. Certainly, part of the desire to be bigger and stronger was also influenced by the society's pressure on athletes to perform at an ever-higher level. This created a culture of the phenomenon “at any risk” to win. In the weightlifting and strongman competitions there is an enormous pressure to lift more and more from year to year, always breaking down and obtaining new records. [29].

Weightlifting is a sport in which athletes lift heavy weights that are made up of discs of different weights placed on the ends of a bar. The empty standard Olympic bar (without mounted discs) weighs 20 kg. It is an Olympic sport, but it can also be practiced by amateurs.

There are two styles: *snatched* (consists of lifting the dumbbell with both arms in a single continuous movement) and *throwing* (consists of lifting the dumbbell to the chest, then raising it by stretching the arms up). In the past there was another style, "pushed", but it was removed from the styles.

In the activity of a coach, the selection represents the first step towards the formation of an object of work and its metamorphosis in order to obtain the performance [10], [31].

The intense increase of the sports performances worldwide implies the permanent improvement of the athletes’ organizational and methodological forms of training at this level. Consequently, the attention of specialists is focused not only

on perfecting the methodology of the high-performance sports training, but also on the selection fund necessary to complete the lots of sports disciplines [8].

Internationally, we have the following weight categories: Juniors U15; Junior U17; Juniors U20; Youth U23; Seniors.

At a national level, in Romania we have the following age categories: Juniors III (9-12 years old); Juniors U15; Juniors U17; Juniors U20; Youth U23; Seniors

If at the international level we have competitions for U15 Juniors, the Romanian Weightlifting Federation has added the age category for Juniors aged 9-12 in order to train new performers to cope brilliantly in international competitions.

In order to reach a sports maturity that ensures good performances on an international level, it takes time, precisely for this reason the selection in weightlifting starts from 9 years or even earlier.

At the moment there is no evidence to indicate the minimum age at which practicing weightlifting can be started. Generally accepted are those who can follow the coach's instructions and who can meet the requirements of the training program [14].

The approach to the selection process in the performance sports in general and in weightlifting specialization in particular, decisively influences the rapid training of the future high-performance athletes in weightlifting [16].

2. Methodology

The research of the specialized literature was done both traditionally and in the online environment. The traditional study consisted of identifying and reading books and articles from specialized magazines about sports and selection in performance sports and selection in weightlifting.

Bibliographic sources have been accessed from related fields that provide theoretical information on the selection and identification of the sports talents.

In the online research, 26 bibliographic references regarding the studied problem were accessed by accessing the Google Scholar database.

The terms used in the search were: “dumbbells”, “selection in dumbbells”, “selection in sports”, “training for children”, “talent identification”, “young athletes”.

The search criteria included books, articles or doctoral theses, educational sources, medical and psychological studies; empirical or theoretical research.

3. Concepts of Selection in Sports

After accessing the databases, we found in the specialised literature that the concept of selection was initially used in an economic and social action, scientifically based since the early twentieth century for the early diagnosis of the professional skills, and the orientation of talents towards one profession or another, based on certain tests and methods meant to highlight the manual dexterity, the reception and the correct and fast learning of some motor schemes. Not being a clearly defined concept, the selection only suggests the beginning of a sports training action, which over the years, has known different expressions.

The most popular expression was the early specialization, which expresses the concern to direct the child to a sporting event from an early age [3], [22]. Then in the '60s, the term early initiation was used, which attenuated the direction of sports specialization towards a process preceding the future consecration from an early age.

Later, the phrase primary selection was used, which represents the moment of the child's entry based on criteria in the sports units [24].

The institutionalization of the unique system of selection and training of the children and juniors is made in 1967, being preceded by the analysis of the experience gained on a national and international level.

Thus, the selection was defined as an organized and repeated process of early detection of the innate availability of the child, junior, using a complex system of criteria (medical, biological, psycho-sociological and motor) for his practice and further specialization in a discipline or sports test [26].

The Research Centre of MTS, together with the Institute of Sports Medicine have developed a complex system for testing subjects and, derived from it, a system of criteria and requirements, which apply uniformly in the effective operation of selecting the child from a heterogeneous mass, which presents certainties regarding the integration, stability, receptivity and the capacity to assert itself in the national or international sports activity.

This system combines in a whole a multitude of criteria that act in a predetermined order, imposed by a methodology verified in practice. An interdisciplinary team of specialists participates in the selection act, each acting in accordance with the rigors of the measuring and assessing instruments.

Five types of criteria act in the national selection system: Medical-sports criteria; Somatophysiological criteria; Biochemical criteria; Psychological criteria; Motor criteria.

The selection is known as the action of permanent sorting of athletes, which is based on complex systemic investigation in order to orient and direct them to the test or branch of sport in which they show motivation and skills.

The need for selection in performance sports is unanimously recognized. However, the current stage of selection of athletes, performed on the basis of initial abilities, followed by the gradual elimination of those who perform less well, is far from satisfactory. Currently there are many premises that allow a substantial improvement in this problem [1].

Mainly, the sports result is determined by the simultaneous action of several factors, whose influences are different.

The biological training is a process of adaptation and improvement of sports. This process does not have an equal evolution for all the functions, organs, and systems of the organism.

Based on what is known today, it can be said that some of the factors on which the sports result depends are less perfectible, while others may even support a substantial improvement.

Currently, in the high-performance contemporary sport, the problem is to find talents, to attract the most talented young people at an early age, who

through a judicious prognosis of biological development and a rational training process, scientifically led and directed, the today's young man may become the tomorrow's performer. Only the talent, without an exceptional sports training, does not lead to a high performance, just as an optimal training without talent, the biological endowment cannot take you to the heights of the sports glory, except exceptionally or conjuncturally.

Today, the selection criteria represent the result of statistical processing of numerous objective data, in their centre being the "biological model" of the today's and the tomorrow's performer. Life clearly shows us that this biological model varies at least from one decade to another, as does the method of training or the biology of the athlete. For a correct approach to selection, a lot of mobility, clairvoyance and at the same time a rigorous forecast must be demonstrated, especially since the data of science are evolving at an accelerated pace [11].

However, without the "right" environment, namely one in which the individual is encouraged and supported and has the opportunity to learn and practice, the optimal performance will never be achieved. Consequently, the talent selection and the identification programs must not only be able to identify relevant psychological, physical and physiological characteristics, but must be able to identify the potential and talent developed.

In conclusion, the talent therefore seems to depend on gene, environment, opportunity, encouragement and the effect of these variables on physical and psychological traits, says Durand-Bush N & Salmela, (2001) [12]. The question is no longer whether the genetic or environmental factors determine the behaviour, but how they interact [18].

Identifying positive traits in a preadolescent child does not guarantee that this characteristic will remain during the maturation process to adulthood [2].
Also, Bompa, (1999) [7], considers that the psychological ability is the most important factor in detecting and identifying talents.

Basic motor skills should be developed before any sports specialization, so that individuals can transfer them with confidence in sports [23].

Also, as athletes improve and achieve better technical and physical homogeneity, the psychological factors (decision making, use of images, etc.) will become increasingly important for performance [5]. This is especially true in sports in which the individual must perform in an unstable and unpredictable environment. In addition, an individual's ability to perform consistently at the highest level depends largely on the psychological factors [20].

The use of the scientific programs for the discovery and identification of talents was initiated in the Eastern and Central Europe [6]. These models were based almost exclusively on identifying the physical and anthropometric characteristics of elites in younger athletes. Indeed, the Olympic success of Bulgaria, Romania and East Germany in the 1960s and 1970s was largely attributed to the scientific processes of talent discovery [6]. As a result of successful sports countries using anthropometry-based talent identification models; similar systems have emerged

and continue to emerge worldwide. For example, in China, the selection of gymnasts takes place taking into account the physical and anthropometric profile of children aged 7 to 9 years [16].

The vastness at which an individual specializes in elite sports programs varies by sport. However, early specialization is very common in the Soviet Union. The earliest specialization appears in women's gymnastics, swimming and figure skating, the selection being made at the age of 4-5 years [19].

4. Selection Components

The primary (initial) selection corresponds to the child's first contact with the training in the sports discipline. This selection usually takes place at 5-6 years, preschool age, in some sports (sports gymnastics, swimming, figure skating, skiing, etc.), at 8-10 years in other sports (athletics, sports games, fencing, etc.) and 10-12 years other sports (boxing, wrestling, etc.). It should not be understood that at the age of 10 we are for boxing, weightlifting, etc. from a competitive point of view; but based on a rigorous selection we are familiar with some elements of the specific training on the background of a multilateral training, in accordance with the physiological requirements of growth.

At weightlifting, children aged 8-9 are chosen, taking into account the following indices [25].

- Health condition, mandatory requirement, requires the selection of children who are in good and very good health. The assessment is made on the basis of a thorough clinical examination to which is added the pulmonary radioscopy and the radiography of the spine in general and of the lumbar spine in particular where the demand is maximum. The investigation of the cardiovascular system must be done very carefully;
- Regarding the height, the children with medium height are selected, between m 1.20 - m 1.30, eliminating those who far exceed the average height;
- The weight is between kg 28-35, corresponding to the medium weight;
- The thoracic perimeter in cm 50-55; children with clogged chest, who show pathological changes or who have values below the average limits are not allowed;
- The pulse should have an average value of 76-80 beats/ min with the signalling of beats rhythm disorders;
- The blood pressure with maximum blood pressure values between 105-120 mmHg and 60-70 mmHg minimum;

The optimal waist/ lower limbs ratio is 55% trunk and 45% lower limbs. The measurement is made by the coach or at a specialized medical office.

The length of the palms is determined by measuring with the centimetre. The bigger the palm, the more accurate the athlete will be able to execute a grip. The measurement is made from the wrist to the fingertips. The longitudinal palm diameter of the world champions varies between 17-24 cm depending on the weight categories [13].

The secondary, pubertal selection takes place around puberty located as an age between 12-16 years, which involves a training period of at least 4 years. If the primary selection takes into account the

family history (parents, brothers, sisters), the neuropsychic structure of the child and the pathological history, health and fitness, motivation for sports, etc., at the secondary selection that is the true selection for the sports performance, we must consider the biological micromodel of the performer, which implies, on the one hand, the biological effects of at least 4 years of training with the respective marks, and on the other hand the development forecast that would give us some certainty that the micromodel today, freed from puberty, can reach the biological macro model of tomorrow. This micromodel considers morphological, structural and functional indicators and effort capacity, all factors favouring the performance of the test [22].

If at this level of selection, after at least 4 years of training, the expected biological micromodel has not been obtained (most often puberty can be involved in this failure, possibly inadequate training), the so-called medical sports and pedagogical orientation can be practiced, which capitalizes these 4 years of training and natural influences, puberty, offering premises for satisfaction in a sport, in a test whose biological requirements in particular are closer to the realities of the model. In this sense, the orientations from swimming to polo, from skating to ice hockey, from athletics to short distance running to long distance running, etc., would seem logical [10], [21].

Many talented children are lost due to the selfishness of some technicians who do not understand that their own students who have a training period of at least 4-6 years and have not achieved great performance, must redirect them to close sports, otherwise they will be lost for the great performance, leaving in the consciousness of these children's irretrievable disappointments for the rest of their lives. That is why the doctor and the coach have an extremely important role at this level of selection, where they must operate in close collaboration with the selection and orientation in order to reduce to a minimum the percentage of the sports failures (Moore et al., 1998; Nijs et al., 2014).

The final selection, the Olympics, for the great performance it represents the last stage of selection in sports. It can be stated and not without reason - that at this level of selection the sports performance operates with priority, and the biological model of the champion for the moment cannot always be generalized and set as a goal for those who come after, always hurry to reach this and why not to surpass it [17].

It is very true that in general the performance is at this level of selection one of the basic indicators, but even the biological ones cannot be ignored, reaching again the entity of selection, a complex multidisciplinary, integrated process [17], [32].

Thus, in the conditions of selection for participation, in a championship, world or continental, at the Olympic Games, where the competition lasts several days, it is sometimes required an acclimatization to altitude, time zone, or special climatic conditions, or a special psychophysical endurance for the competition that lasts several days, the biological selection indicators become as important as the sports performance taken as a singular element. Thus, the biological indicators

reflect a good physical robustness (aerobic and anaerobic capacity) or mental (stress resistance, psychoreactivity, maintaining an increased yield under stress conditions, concentrated attention, etc.) not to mention the level of health, become decisive in selecting a sportsman for such sporting events. So, there is a real selection at this level as well [11].

5. Conclusions

The selection is a process that allows the early detection of the child's innate availability with the help of a complex system of criteria (medical, biological, psychosocial and motor). The medical-biological criteria allow the analysis of the state of health, of the physical development and of the functional state.

The selection is not a single operation, done once and for all, but it is an evolutionary process. The high level of performances imposes a special importance in making a selection and a rigorous observance of the particularities of practicing performance sports.

In high performance sports, the most talented professional athletes are recruited from athletes who reach the threshold of maximum performance capacity or who meet the requirements imposed by the large-scale competitions in which they participate.

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