

ON THE QUESTION OF PERIODIZATION TRAINING CONTENT AND PARALYMPIC ATHLETES WITH DISORDERS OF THE MUSCULOSKELETAL SYSTEM IN THE LIGHT OF THE GENERAL THEORY OF SPORTS TRAINING

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Annotation. *Purpose:* To determine theoretically similar trends and differences in the periods of sports training athletes and Paralympic athletes with similar qualifications, without disabilities. *Material:* analyzed more than 80 references. *Results:* at present insufficiently developed periodization sports training many years to prepare athletes with disorders of the musculoskeletal system. Also - at the stage of maximum realization of individual empowerment athletes. This applies to the immediate preparation for the main competition. In the first case, periodization can be carried out on the basis of the classical theory. Also on stage, maximizing the individual capabilities. Need to adapt this theory to career achievements of athletes. Also, you must consider the disease. *Conclusions:* The main factors set differences training tools Paralympic athletes and physically healthy: increased attention to the psychological preparation for the Paralympics, inclusive education and sports training individualization programs already in the first stage of their training.

Keywords: sports, athletes, Paralympians, periodization, training, special, needs.

Introduction

Scientific literature data (A.P. Bondarchuk, 2005; M.M. Bulatov, 1996; Yu.V. Verkhoshanskiy, 2005; L.P. Matveyev, 2010; V.M. Platonov 2013; Bompa T., 2009) witness that at modern stage periodization and content of training of highly qualified sportsmen, including track and field representatives are studied at rather high level. Formation of principles and trainings' content at stage of basic preparation of disabled sportsmen is also progressing (Yu.A. Briskin, 2005; D.P. Vinnik, 2010; S.P. Yevseyev, 2002; Ye.N. Pristupa, 2013; De Pauw K. P., 2005; Mujika I., 2009; Sherrill C., 2004). At the same time there are no works, oriented on foundation of track and field para-Olympic sportsmen with abnormalities of supporting-motor system on stage of maximal realization of individual potentials that conditions need in such researches.

The work has been fulfilled in compliance with plan of scientific & research works of physical education faculty of Carpathian national university, named by Vasyl Stefanko, for 2011-2015.

Purpose, tasks of the work, material and methods

The purpose of the work is to determine on theoretical level similar trends and distinctions in periodization of track and field para- Olympic sportsmen's training and training of healthy track and field sportsmen of the same qualification.

In the course of the research we used general scientific methods, videlicet: analysis, systemizing, generalizing of literature data. Organization of the research stipulated commonly accepted at this stage actions of subject of the research [11].

Results of the research

With every new Para-Olympic Games the quantity of different medals, won by Ukrainian sportsmen, in particular by track and field sportsmen, is increasing. For example since the very beginning and up to the present time quantity of won medals was: 1996 one gold, one silver and one bronze; 2000- accordingly one, 14 and 10; 2004 – 12, 8, 9; 2012 – 15, 11, 14 [3]. The mentioned above witnesses about rather high level of organization-methodic provision of disabled track and fields sportsmen's training in period of preparation to Para-Olympic Games and, at the same time, about presence of reserves, realization of which could facilitate achievement of higher results.

In connection with the latter it is rather important to generalize and systemize the data concerning organization, training of such sportsmen for the mentioned competitions in preparatory period. In the most general form it is connected with the fact that presence of such information will ensure further improvement of training process, which, in its turn, will facilitate achieving of new records. At the same time, in available literature we did not find required information, though training of disabled sportsmen at earlier stages of this many years process, according to data of one of advanced foreign researchers of adaptive sports D.P. Vinnik [6], is regarded in many of scientific works. On the other hand we can note high level of theoretical and organizational-methodic principles' development, concerning highly qualifies, not disabled track and field sportsmen.

Considering the above mentioned, one of first steps of solution of the raised by us problem is marking out of theoretical principles of highly qualified disabled sportsmen's training and, in particular (in context of our research) – track and field sportsmen with abnormalities of supporting motor system, with the help of general theory of healthy sportsmen's training. The latter witnesses that training of such structure is characterized by mega-structure, i.e. by structure of many-years training and its stages as well as by four years Olympic cycles [9; 16]. Mega-structure stipulates two independent stages: formation of higher sportsmanship, development and realization of this sportsmanship; duration of these stages takes, as a rule, accordingly from 7-8 to 10-12 and from 2-3 to 10-15 years. At the same time we can note that other stage stipulates the following steps: maximal realization of individual abilities, maintaining of higher sportsmanship, gradual reducing of achievements.

The mentioned, but it is more probable with certain specification first of all of age limits of every of two stages' endurance, concerns to full extent disabled sportsmen or, in other words,- adaptive sports [6; 7] or sport for disabled [3]. As available information witnesses [2] the structure of many years training of disabled sportsmen envisages the following stages: health-related- correcting with elements of track and fields and other kinds of sports; initial training without clear specialization; training; sports improvement; higher sportsmanship.

Comparing components of the supplied structures we can note presence of common, to be more exact similar stage – maximal realization of individual potentials, which is represented in the above given structure of many years training of healthy sportsmen and higher sportsmanship (presented in structure of disabled sportsmen's training).

So the basis of periodization of sport training of highly qualified track and field sportsmen with abnormalities of supporting motor system as many years process can be classic theory, developed for healthy sportsmen.

Analysis of information, connected with the stage of maximal realization of individual potentials, witnessed that its aim was further improvement of sport results [1]. Main features of this stage are maximal for certain sportsman training loads, which can be reached, mainly, at the account of specially oriented means. In the future, total scope of loads, as a rule, is maintained at achieved level; the main in this is searching of latent reserves of improvement certain sides of sportsman's fitness and ensuring of their realization in competition functioning [8]. In particular, it is necessary to accentuate attention on physical fitness [5]; seeking of reserves in psychological, tactical fitness and formation of the most effective model of competition functioning, basing on sportsman's individual features and main sides of his (her) fitness, are of the first priority [9].

So, the purpose and the tasks, which in general theory of sport training are determining for marking out of every stage of many years training of healthy sportsmen, at the stage of maximal realization of individual potentials to large extent coincide with purpose and tasks for disabled sportsmen. At the same time this stage, in our opinion, has certain distinctions, first of all in connection with intrinsic to disabled sportsmen features, which are reflected in existing classification of nosologic groups and classes. In particular track and fields sportsmen with problems of SMS (supporting motor system) are divided into the following groups and nosologies: sportsmen with amputations and equal to them defects; this group is subdivided into 8 classes; sportsmen with cerebral palsy and equal to it defects (8 classes); sportsmen with spinal defects (8 classes) [15]. Concerning possible differences, they are connected, first of all, with other duration of specified period (probably less than in case of healthy sportsmen); higher effectiveness of other strategy of periodization of stage of individual potentials' maximal realization.

In other words, the basis for periodization of highly qualified track and fields sportsmen's with SMS problems trainings at stage of maximal individual potentials' realization can be classic theory, adapted for achievements, but specified, considering peculiarities of every nosologic group.

Analysis of special literature, which was conducted in connection with the above mentioned, witnessed that at modern stage, periodization of stage of individual potentials' maximal realization of healthy track and fields sportsmen is characterized by several strategies, which to the largest extent guarantee achievement of highest sportsman's readiness for main start: first application of one-, two- and three-cycle (quantity of macro-cycles) models and the second – application of many-cycles models, usually 4-7 [12;14]. At the same time it is stressed [9] that in years, free from Olympic Games, it is purposeful to use the second strategy and in Olympic year – the first.

To certain extent the first variant of strategy is specified by information of American association of swimming coaches, demand in consideration of which in our case, is conditioned by several reasons: significant advantage of American swimmers at international competitions during 1992-2013; track and fields, like swimming, belongs to individual kinds of sports and by bio-mechanical construction of swimming competition exercises and most of disciplines of the first (considering variety of distances for sportsmen with SMS problems) have cyclic character. For example it is noted [19] that the most effective at modern stage is one cycle model of periodization, which ensures long training period (8 months), which includes general and special as well as competition and transitive periods. With it, it is important that in this model main principles and biological pre-conditions are in complete coincidence with traditional theory of periodization [9].

Concerning optimal annual scope of works it is 1400-1500 hours, while correlation of general, auxiliary and special trainings is accordingly 12; 23 and 65 % [4]. At the same time it is noted [17] that in both above mentioned strategies scopes of work, fulfilled during one year can be unequal: the mentioned scope can be fulfilled by sportsmen with quantity of trainings in main micro-cycles up to 12-15 and their total quantity up to 600-700; in other years load can be reduced up to 900-1000 hours, 8-10 trainings in main micro-cycles and 350-400 of such trainings during year. In this case qualitative characteristics are accentuated, especially highly intensive exercises in conditions of full recreation after previous loads.

Analysis of recommendations of development department of International association of track and field federations (IAAF) about periodization witnessed that its basis was classic theory, but adapted to different stages of achievements of highly qualified athletes. In particular, in recommended periodization models (cited by [9]) the structure and content of trainings during one year, separate macro and meso-cycles are classic as far as they ensure preparation period (including general and special-preparatory periods); competition period (consists of stage of early and main competitions); transitive period. Specific character implies priority of certain quantity of cycles, which depends on sportsman's age and his being on one of the levels of second stage. For example at stage of training for realization of highest achievements, during one year they use one-cycle model, at stage of individual potentials' maximal realization – two-cycle model and at stage of preservation of achievements – three – five cycle models.

The structure and approximate content of athletes' training at stage of maximal realization of individual potentials, videlicet direct preparation for Olympic starts, which begins one year before Olympic Games, in compliance with the above mentioned recommendations, stipulate the following. Training is oriented on achievement of highest sportsman's readiness for start at competitions, which ensure preservation of basic components of readiness with maximally possible increasing of sportsman's special qualities and ensuring of their full fledged recreation. The structure and content consider both main principles of macro-cycle's building and specific principles, conditioned by the set task. For example structure is 4 meso-cycles: basic, (14 days, 70-75 hours' scope of work); special-preparatory (21 day and 95-100 hours); pre-competition (14 days, 40-45 hours) and competition (13 days, 30-35 hours).

In its turn, structure of basic period stipulates two (one week every) main micro-cycles, which ensure: the first – fulfillment of 30-32 hours of work with load 80% from maximal; the second – 34-36 hours and 100% load. With it principle specificity of this not long meso-cycle – is basic orientation with the following scope of means: general preparation -60-70% from total scope in order to preserve functional conditions, which were achieved in previous trainings; 10% - for special training; 20-30% - for recreation.

Special-preparatory meso-cycle consists of three main micro-cycles – one week each of them- and the following parameters: first scope of work to be fulfilled is 24-26 hours with load of 80% from maximal; second and third – 28-30 hours every one and 100% load. Main peculiarity of this period is sharp increasing of scope of special training, approaching to maximal requirement of competition functioning. In other words, in this periods, extremely high loads are used and they are of special orientation and exceed those, which were applied before as well as some additional external factors: conditions of moderate or high mountains, etc. Main tasks of this meso-cycle is maximal increasing of speed parameters, development of speed and special endurance, different integral training with simulation of some elements of competition functioning. Scope of means for ensuring of these tasks shall be at least 60% from total; 15% shall be basic training and 25% - recreation.

Pre-competition meso-cycle consists of two micro-cycles; each of them takes one week and has the following parameters: the first is recreational with volume of work – 16-18 hours and load 30% from maximal; the second – preparatory (volume of work – 18-20 hours and load of 40-45% from maximal). Main feature of this meso-cycle is full fledged recreation of physical and mental condition after loads of previous meso-cycle. One of directions for achievement of this aim is using of not high loads of special orientation for improvement of technical tactic actions and functional responses, required for demonstration of the best results in future competition functioning. The other tasks, for solution of which greater scope of means is used, are: recreation, formation of optimal day regime of motion functioning and rest, psychological training.

The structure of competition meso-cycle determines quantity and time of starts during competitions. Main feature is that this work stipulates a complex of measures. In particular, it is understanding of technical-tactic actions, realization of which will facilitate optimal (for current competition situation) organization of sport struggle at certain start. Psychological adjustment to these starts is, first of all, formation of sportsman's belief in own readiness to demonstrate the best result. Also formation of optimal day-night rhythm of vegetative and motion functions, prophylaxis of traumas and diseases, full fledged recreation, effective warming up before start.

Analyzing the existing information we have to note the absence of clearly outlined volumes of work and values of loads in pre-competition meso-cycle, which would ensure successful solution of tasks of special and basic trainings, as well as recreation. One of reasons of such situation can lie in the fact that these parameters are extremely conditioned by individual features of a sportsman, first of all connected with reached as on the moment conditions,

which are regarded from point of view “strong-weak” sides of his (her) readiness for demonstration of the best results during competitions.

It is highly probable that these parameters of sportsmen with SMS problems differ from those of healthy sportsmen. First of all it is connected with the fact that even at the first stage (stage of basic training) important place in training programs of disabled sportsmen is taken by methods of control of their behavior [6], i.e. psychological training, while in programs of healthy sportsmen of the same qualification such tasks are practically absent [8; 12; 14]. The other peculiarity is that for sportsmen with SMS problems it very important to use exercises, which facilitate correction of restricted functions, conditioned by disease.

Other important factors, which determine differences between training methods of healthy sportsmen and sportsmen with SMS problems are: group training functioning (inclusive training); individualization of sport training programs, starting from the first stage, as far as these factors are very important for disabled sportsmen and practically absent in programs for healthy sportsmen.

The problem of detailing of these factors in the aspect of their consideration with formation of different sides of disabled sportsmen’s training in general and sportsmen with SMS problems in particular at the stage of maximal realization of individual potentials has not been solved yet. At the same time available data permit to outline general approaches to formation and realization of such content. For example, for behavior control of disabled persons the following approaches are used to day: intensifying or weakening of behavior; psychological-pedagogic; psychodynamic; ecological; bio-geneous; humanistic [6]. At the same time data about their practical realization witness that complex approach is the most expanded, with techniques of behavior changes, humanistic and psychological-pedagogic approaches, depending on conditions of training and one of them being dominating, in the base [18].

Demand in mutual with healthy sportsmen trainings, as one more factor, is conditioned by complex of proved in practice and scientifically the following reasons: creation of stimulating and motivation atmosphere, ensuring of models, which stimulate for further progressing of abilities [10;13].

Individualization of sport training programs, even at first stage of training, which is intrinsic to junior disabled sportsmen (and is not intrinsic to healthy junior sportsmen) is conditioned by a complex of reasons. For example it is of common knowledge that every disease reflects in certain definite way in growth and development of child’s organism. In this connection there appear restrictions in development of certain functions, but they can be compensated by high development of other ones [6]. Specifying the mentioned it should be noted that individualization is embedded in disabled sportsmen’s training from the very beginning: by existing division of sportsmen into nosologic groups; by subdividing of such groups into classes, which are conditioned just by restrictions of a sportsman.

Conclusions:

1. Periodization of sport training of track and field athletes with SMS problems as many years process can be realized in compliance with classic theory, i.e theory for healthy sportsmen.

2. The basis for periodization of sport training of highly qualified sportsmen with SMS problems at the stage of maximal realization of individual potentials can be classic theory, adapted for their achievements, but specified by characteristics of diseases of every nosologic group.

3. Main factors, which determine difference between training means for sportsmen with SMS problems and healthy asportsmen are connected with demand in the following: more attention to psychological training of the former in comparison with the latter; inclusive training (combined with healthy sportsmen trainings) and individualization of sport training programs for sportsmen with SMS problems, starting from first stages of training.

The prospects of further researches we connect with detailing of content of physical and psychological training of track and field athletes with SMS problems during direct preparation for main competitions on the base of existing in modern classic theory conceptual ideas and principles.

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Cite this article as: Derkach V.N., Yedinak G.A. On the question of periodization training content and Paralympic athletes with disorders of the musculoskeletal system in the light of the general theory of sports training. *Pedagogics, psychology, medical-biological problems of physical training and sports*, 2014, vol.5, pp. 13-18. doi:10.6084/m9.figshare.971026

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Received: 25.01.2014
Published: 25.02.2014